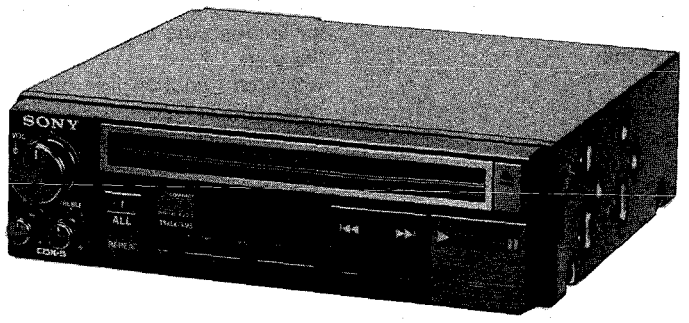
CDX-5

SERVICE MANUAL

US Model
Canadian Model
AEP Model



SPECIFICATIONS

System	Compact disc digital audio system
Disc	Compact disc
Laser	Semiconductor laser ($\lambda = 780$ nm)
Spindle speed	200 r.p.m. to 500 r.p.m. (CLV)
Error correction	Sony Super Strategy Cross Interleave Read Solomon Code
Number of channels	2
D-A conversion	16-bit linear
Frequency response	5–20,000 Hz ±1.0 dB
Harmonic distortion	0.005% (1 kHz)
Dynamic range	90 dB
Signal to noise ratio	90 dB
Channel separation	85 dB
Wow and flutter	Below measurable limit
Tone controls	Bass ±10 dB (100 Hz) Treble ±10 dB (10 kHz)
Outputs	Line outputs
Inputs	Line inputs

Disc

Track pitch	1.6 μm
Sampling frequency	44.1 kHz
Quantization	16 bit linear quantizing/ channel
Modulation system	EFM
Transfer rate	2.03 Mbit/sec. (before modulation)

—Continued on Page 2—

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MICROFILM

COMPACT DISC PLAYER

SONY®

AUD

General

Power requirements	
	12 V dc car battery (negative ground)
Current drain	840 mA (playback) 2 A (during disc loading or eject)
Operating temperature	−10°C–50°C (15°F–120°F)
Dimensions	Approx. 178 × 50 × 155 mm (w/h/d) (7 1/8 × 2 × 6 1/8 in.) including projecting parts and controls
Weight	Approx. 1.8 kg (4 lb), net

FEATURES

- Compact—the same size as a cassette car stereo—for easy mounting.
- At lightest touch, the "feather-touch" function keys enable you to switch directly from one mode to another.
- Direct connection to a power amplifier.
- One-action loading system for automatic loading of the disc and setting of the unit to the play mode.
- AMS (Automatic Music Sensor) function for locating the beginning of a selection on the disc.
- Search function for locating a desired point on the disc.
- Two types of repeat function: one for the whole disc and one for a specific selection.
- Self-store mechanism for automatic reloading of the disc when it is ejected and left for approx. 15 seconds, to protect it from dust.
- Connecting cords for other indash units.
- Return button (L) to return the unit to the beginning of the disc.
- Digital display for either track number or elapsed playing time of the selection.
- Illumination of the controls and disc insertion door for easy operation even in the dark.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

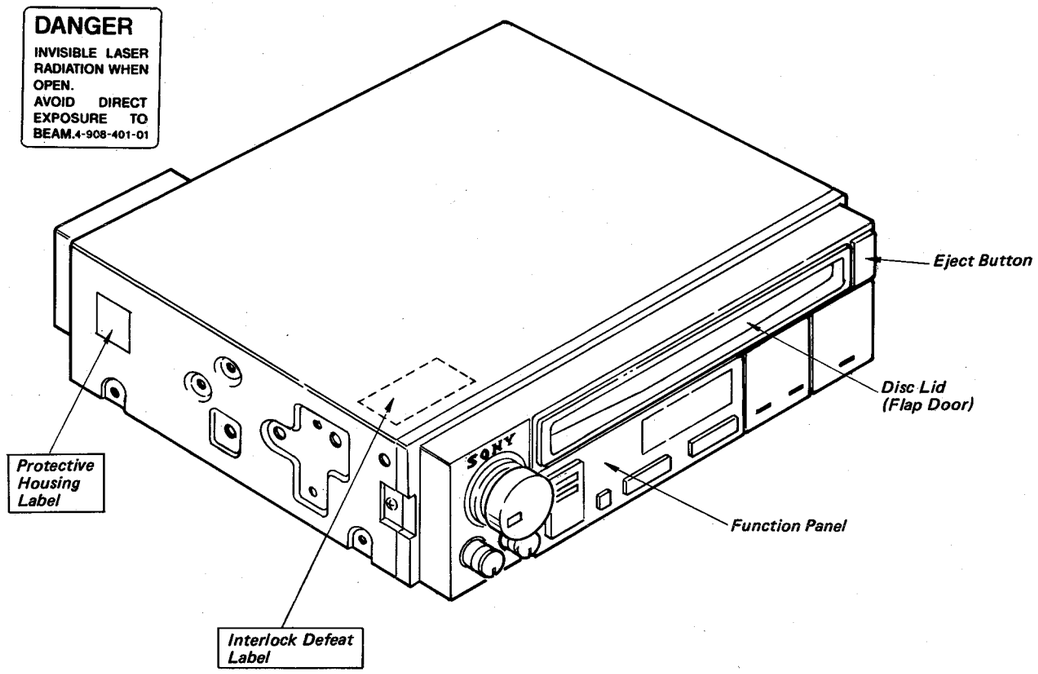
1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 0.4 mW*
     * This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.
   - Classification: Class IIIb
2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

LASER WARNING LABEL (US, Canadian model)

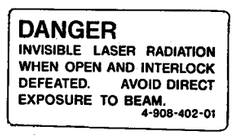
The labels shown below are affixed.

1. Protective Housing Label
   DHHS Protective Housing Label

— Top Left-hand Side View —



2. Interlock Defeat Label



— CAUTION FOR ELECTROSTATIC BREAKDOWN —

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (KSS-100B)

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

The printed matter below is included in the repair parts. During repair, use the procedure in the printed matter.

The following method is an example for reference purposes:

1. Place a conductive sheet on the workbench. (The black sheet used as repair parts wrapping.)
2. Place the set on the conductive sheet so that the chassis touches the sheet. (This makes it the same potential as the conductive sheet.)
3. Place your hands on the conductive sheet. (This makes them the same potential as the sheet.)
4. Remove the optical pick-up block from the bag (conductive).
5. Perform work on top of the conductive sheet. Be careful that clothing does not touch the optical pick-up block.

Printed Matter Included in the Repair Parts

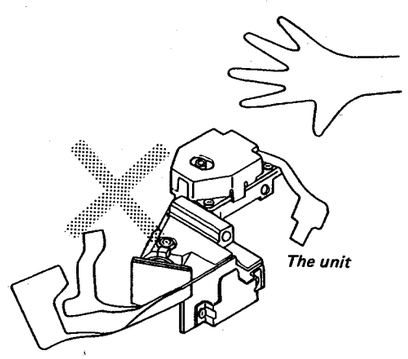
When opening or repairing a KSS-100B, the procedure for grounding as follows is required to prevent damage caused by static electricity.

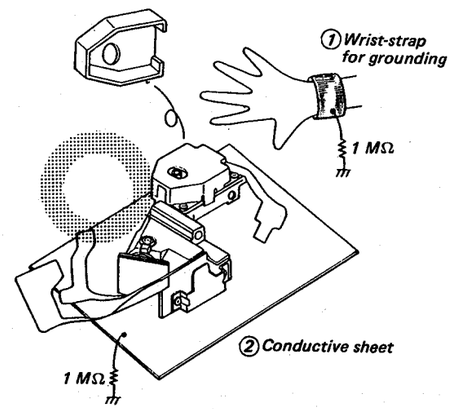
1 Grounding for the human body
Be sure to put on a wrist-strap for grounding (with impedance lower than 10^8 Ω) whose other end is grounded. The strap works to drain away the static electricity build-up on the human body.

2 Grounding for the work table
Be sure to lay on the table a conductive sheet (with impedance lower than 10^9 Ω) such as a sheet of copper, which is grounded.

3 As static electricity build-up on clothes is not drainded away, be careful not to let your clothes touch the KSS-100B.

4. Handling the flexible board
The flexible board is easily damaged and should be handled with care.

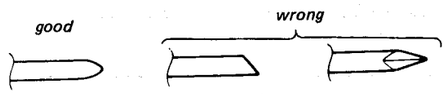


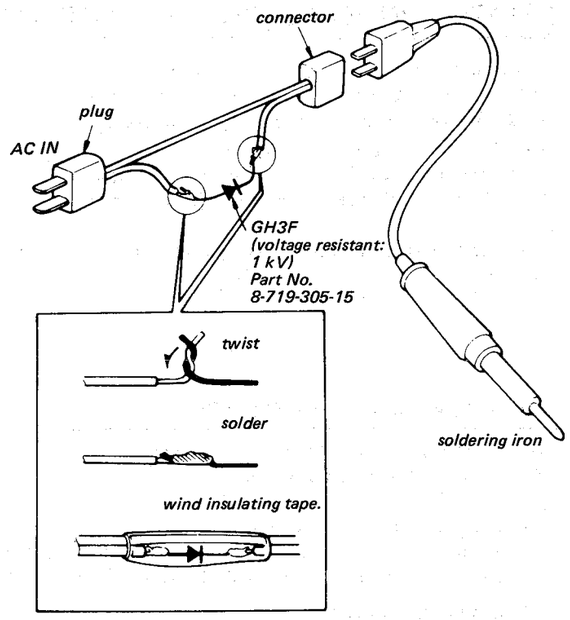


FLEXIBLE CIRCUIT BOARD REPAIRING

1. Keep the temperature of the soldering iron at 270° ± 10°C during repairing.
   You can maintain the temperature of the soldering iron around 270°C by using the thermal controller as illustrated on the right.
2. Do not touch the soldering iron more than 4 seconds or 3 times on the same conductor of the circuit board.
3. Do not apply force on the conductor when soldering or unsoldering.

Tip of soldering iron





(NOTE ON REPLACING ELECTRICAL PARTS)

There is limited space inside in this set. When replacing electrical parts on the PC board, be sure to eliminate part floating and soldering boss.

(POWER SUPPLY FOR REPAIR)

Supply enough power to operate this set normally.

- When operating the set individually, use a regulated power supply or car battery of more than DC 14.4V, 2A.
- When operating the set with a power amp, use a regulated power supply or car battery of more than DC 14.4V, 20A.

(CONNECTION TO POWER SUPPLY)

- + side .....Power input lead (red) (ACC)
  Power input lead (yellow) (BACK UP)
- − side .....Ground wire (black) (−)

(DC−DC CONVERTER UNIT CHECK)

When checking the DC-DC converter unit individually, connect a dummy load so that about a 5mA current flows to each output pin.

30V pin	: about	6.2KΩ	1/4W
±13.5V pin	: about	2.7KΩ	1/4W
± 8V pin	: about	1.6KΩ	1/4W

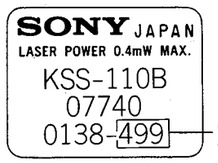
NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE CHECK PROCEDURE

- Procedure 1 (checking by eye)
  1. Push S903 by hand and keep it on.
  2. Push PLAY/PAUSE key (S59) to obtain PLAY mode.
  3. Observe the objective lens and confirm that the laser diode is emitting light. At this time, the laser diode goes on for about 3 seconds due to focus search. If it does not, APC circuit or FOP is defective.

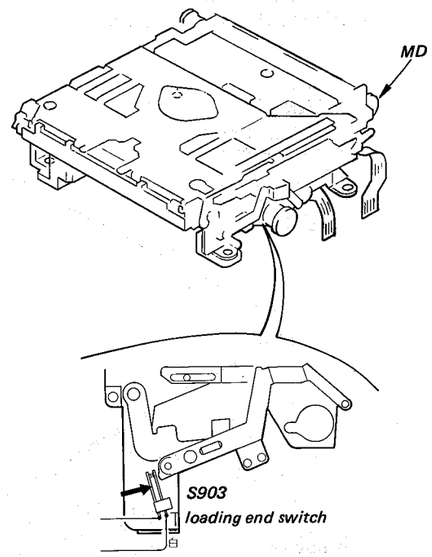
- Procedure 2 (checking current value)
  1. Turn off the power switch.
  2. Connect current probe of oscilloscope to the jumper wire, or cut it and connect VOM across the jumper wire.
  3. Turn on the power switch.
  4. Push S903 by hand to obtain PLAY mode.
  5. Read the current value flowing on the jumper wire at this time.
  6. The current value is indicated on the label affixed to the FOP.
     (Label on FOP)

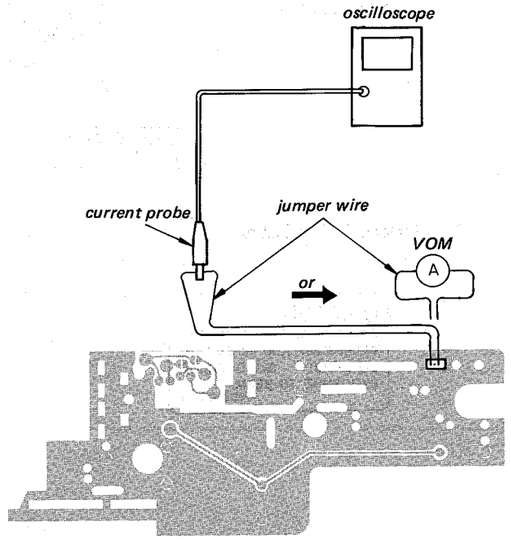


current value
This means 49.9 mA

The current value varies with the set.
Confirm that the ammeter reading is within the range given below.
value on label +11, −5 mA(25 ℃)
variation relative to temperature :
0.4 mA/℃
(Current increases when temperature rises and decreases when it drops.)
If the value is more than the range given, APC circuit is defective or the laser diode has deteriorated. If it is less, APC circuit of FOP is defective.

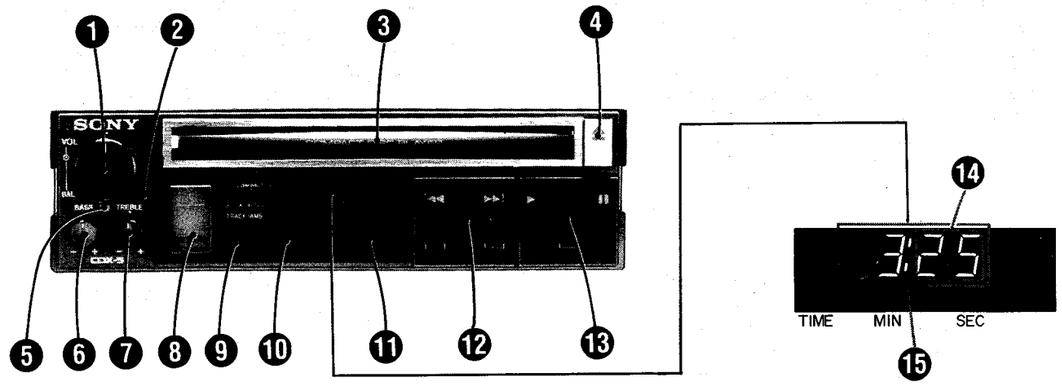
7. Turn the power switch off and reconnect the jumper wire.





[RF amp Board] component side

LOCATION AND FUNCTION OF CONTROLS



Each number in the text is keyed to that of the photo above.

❶ VOL (volume) control
This regulates the overall sound level. Turn clockwise to increase the sound level, and counterclockwise to decrease it.

❷ Reset button
If the built-in microprocessor malfunctions due to noise, etc., and no button or control functions, press this button with a pencil or similar object.

❸ Disc slot
Slightly insert a compact disc with its label surface facing up. The disc is then automatically loaded into the unit and play will start.

❹ ⏏ (eject) button
Press this button to remove the disc. If the disc is ejected and left for more than 15 seconds, the disc is automatically inserted into the unit again and the unit enters the stop mode.

❺ BAL (balance) control
This governs the amount of sound coming from each paired speaker to get optimum stereo effect.

❻ BASS control
This controls the bass response.
To adjust the bass, press this control so that it pops out.
Turn it towards + to increase the bass response and towards – to decrease it.
When the adjustment is completed, depress the control.

❼ TREBLE control
This controls the treble response.
To adjust the treble, press this control so that it pops out.
Turn it towards + to increase the treble response and towards – to decrease it.
When the adjustment is completed, depress the control.

❽ REPEAT key and indicators
When the key is pressed once, the 1 indicator illuminates and the current selection is played back repeatedly. When the key is pressed again, the ALL indicator illuminates and all the selections on the disc are played back repeatedly. To release the repeat play, press the key again.

❾ DISPLAY button
Each time this button is pressed, the display window shows the track number or elapsed playing time.

❿ L↵ (return) button
When this button is pressed during play, the unit starts playback at the beginning of the disc. Pressing this button in the pause mode returns the unit to the beginning of the disc and the unit will stand by in the pause mode. The display window shows track number 1 .

⓫ Search key
During either play or pause, press either side of this key to search for a particular point on the disc.
◀◀: To go backwards at high speed.
▶▶: To skip ahead at high speed.

⓬ AMS (Automatic Music Sensor) key
During either play or pause, press either side of this key to start playback at the beginning of a particular selection.
|◀◀: To go back to the beginning of a previous selection.
▶▶|: To skip ahead to the beginning of a later selection.

⓭ ▶ PLAY/❚❚ PAUSE key and indicators
When a disc is loaded, the unit automatically enters play mode and the ▶ indicator illuminates. To suspend play temporarily, press this key. The ❚❚ indicator illuminates. When the key is pressed for more than 2 seconds during play, the disc stops rotating. To resume play, press the key again.
When the unit is left in the pause mode for approx. 5 minutes, the unit automatically enters stop mode.

Display window

⓮ Track number indicator
When disc play is started, the track number is displayed.
If the ▶▶ key is kept pressed at the end of the disc or the ◀◀ key is kept pressed at the beginning of the disc, the indication is replaced by – –.

⓯ TIME counter
When the DISPLAY button is pressed during play, the display window shows the elapsed playing time in minutes and seconds.

OPERATION

DISC PLAY
The number in the text is keyed to that of the photo on page 7.

1 Insert a compact disc into the disc slot ❸ with the label surface facing up.
2 The disc is automatically loaded into the unit and play starts at the beginning of the first selection. The ▶ indicator ⓭ illuminates and track number 1 is displayed in the track number indicator ⓮.
3 Adjust the sound level and quality with VOL ❶, BASS ❻ and TREBLE ❼ controls.
4 If necessary, adjust BAL control ❺ to obtain a good stereo effect.

When the last selection has been played, the unit enters pause mode and the track number indicator shows 1 . (When the ▶ PLAY/❚❚ PAUSE key ⓭ is pressed, play starts again from the beginning of the first selection.)

Note
If a compact disc has already been inserted, do not try to insert another disc. Doing so may result in trouble.

TO STOP DURING PLAY

To take out the disc
Press the ⏏ button ❹. The disc comes out automatically. When the disc is left for approx. 15 seconds, the disc is automatically loaded again and the unit enters the pause mode. When the disc is slightly inserted or the ▶ PLAY/❚❚ PAUSE key ⓭ is pressed, the disc is loaded again and play starts from the beginning of the first selection.

To pause (temporarily) during play
Press the ▶ PLAY/❚❚ PAUSE key ⓭. The ❚❚ indicator illuminates and the unit enters the pause mode. To release the pause mode, press the key again. Play restarts from the same point.

To reset to the beginning of the first selection
Press the L↵ button ❿. When the button is pressed during play, play restarts from the beginning of the first selection.
During pause mode, the unit stands by at the beginning of the first selection.

If the ignition key is turned OFF during play, the unit will enter the stop mode when the key is set to ON or the accessory position the next time after approx. 15 seconds.

Sound skip
When you are driving on a very rough road, the sound is sometimes skipped. This is inevitable and will not cause machine trouble, disc scratches, etc. When you return to good road conditions, you will enjoy superb sound.

Beep signal
When the power is supplied or a key is pressed, a beep signal sounds. When the signal tone is not necessary, press the |◀◀ side of the AMS key ⓬ for more than 2 seconds while pressing the L↵ button ❿.
To resume the beep signal, press the ▶▶| side of the AMS key for more than 2 seconds while pressing the L↵ button.

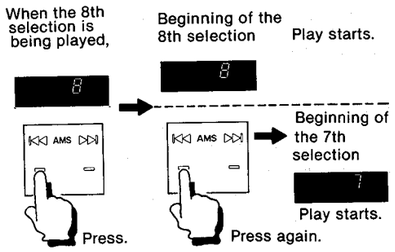
An important point to remember
In the CD system, a wider dynamic range is achieved than that of the conventional analog system, and the peaks of high level inputs are recorded with high-fidelity. In addition, the noise level is very low.
If you turn up the volume inadvertently while listening to a portion where no audio signals of very low level inputs are recorded, the speakers may be damaged when the portion with peak levels is played.

TO SEARCH FOR A PARTICULAR SELECTION

—AMS (Automatic Music Sensor) function

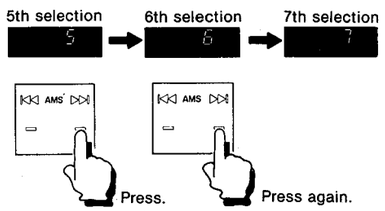
Using the AMS key, you can quickly locate a desired selection ahead or behind during either play or pause. The track number indicator ⓮ shows the track number of the selection being searched for.

To search for a previous selection
Press the I◀◀ side of the AMS key ⓬ during play or pause.
When the I◀◀ side of the AMS key is pressed once, the beginning of the selection being played is searched for.
When the key is repeatedly pressed, the previous selection is searched for.



Press the I◀◀ side repeatedly until the desired music number is displayed.
If you press the I◀◀ side after the first selection is located, the track indicator ⓮ will not change.

To search for a selection ahead
Press the ▶▶I side of the AMS key ⓬ during play or pause.
When the ▶▶I side key is pressed once, the next selection after that being played is searched for.
When the key is repeatedly pressed, the selection ahead of the next one is searched for.



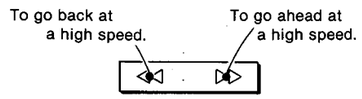
Press the ▶▶I side repeatedly until the desired music number is displayed.
If you press the ▶▶I side after the last selection is located, the track indicator ⓮ will not change.

TO SEARCH FOR A PARTICULAR POINT IN A SELECTION

—Search selection

Using the search key ⓫, you can locate a particular point of a selection during play or pause. While one side of the search key is pressed, the disc playing goes ahead or back. Release the key at the desired point found by observing the TIME counter ⓯ or monitoring the high-speed sound (only during play).

Search key



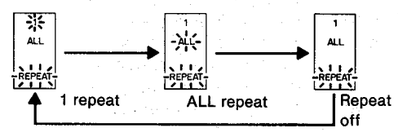
What is this indication?

This indication is displayed when you have passed the end of the disc by keeping the ▶▶ side pressed. The indication returns to normal display when the ◀◀ side of the search key ⓫ is pressed.

This indication is also displayed when you have passed the beginning of the disc by keeping the ◀◀ side pressed. When the player is in the play mode, the indication automatically returns to the normal display. In the pause mode, press the ▶▶ side of the search key.

REPEAT PLAY

Using the REPEAT key ❽, you can repeat the selection being played, or the whole disc. Each time the REPEAT key is pressed, the repeat mode changes as follows.

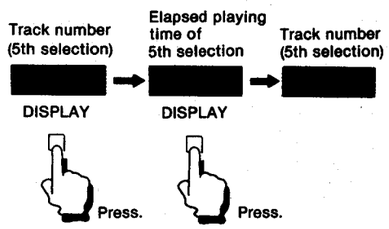


TO REPEAT ONLY THE SELECTION BEING PLAYED
Press the REPEAT key once during play or before the start of play so that the 1 indicator illuminates. When the disc reaches the end of the selection, the player will automatically go back to the beginning of the selection and play will restart. To release repeat mode, press the REPEAT key twice.

TO REPEAT THE WHOLE DISC
Press the REPEAT key twice during play or before the start of play, so that the ALL indicator illuminates. When the disc reaches the end of the last selection, the player will automatically go back to the beginning of the first selection, and play will restart. To release repeat mode, press the REPEAT key once.

DISPLAY WINDOW

When the disc is loaded and play is started, the display window shows the track number. When the DISPLAY button ❾ is pressed, the display window shows the elapsed playing time of the selection being played in minutes and seconds. Press the DISPLAY button ❾ again to display the track number.



TROUBLE CHECKS

The following checks will assist in the correction of most problems which you may encounter with your unit. Should any problem persist after you have made these checks, consult your nearest Sony service facility. Before going through the check list below, first refer back to the connection and operating procedures.

Disc cannot be loaded or the disc is automatically ejected (the error indicator (E) illuminates).
- A disc is already loaded.
- The disc is inserted with the label surface downwards.
- Dusty or defective disc.
- The ambient temperature is more than 50°C (120°F).

Play does not begin.
- The unit is in the pause mode.

The operation keys do not work.
- The built-in microprocessor malfunctions. Press the reset button.

The sound is skipped due to vibration.
- The shipping screw is not removed.
- The unit is installed at an angle of more than 20°.

CDX-5

SERVICE MANUAL

US Model
Canadian Model
AEP Model

No. 2
February, 1986

SUPPLEMENT

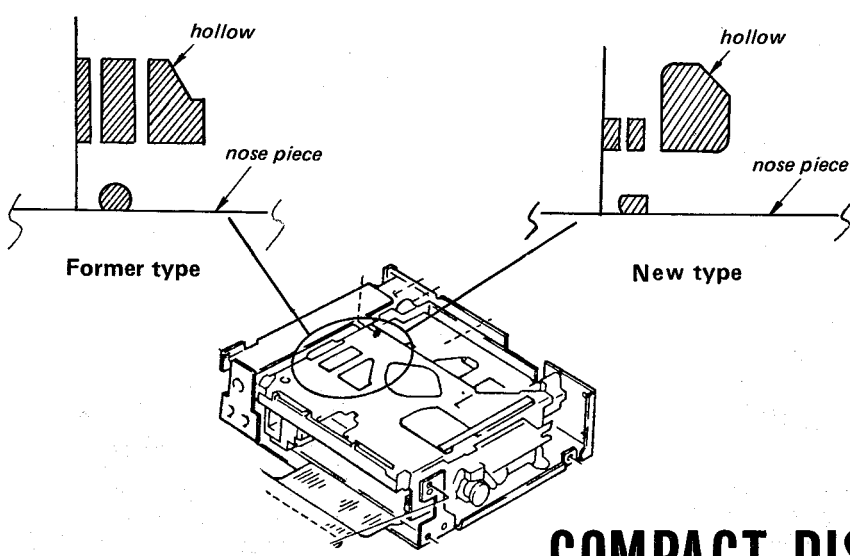
File this Supplement with the Service Manual

Subject: Mechanical section change

Mechanical section has been changed greatly.

New type and former one can be discriminated by the shape of hollow as illustrated below after removing case (upper).

Distination	Serial No.			
US Model	17,080 and later (except for following)			
	16,821~17,079	17,125	17,154	17,367
	17,083~17,086	17,126	17,174	17,376
	17,096	17,136	17,183	17,403
	17,099	17,147	17,196	17,410
	17,100	17,148	17 211	
Canadian Model	A15,901 and later			
AEP Model	17,801 and later			

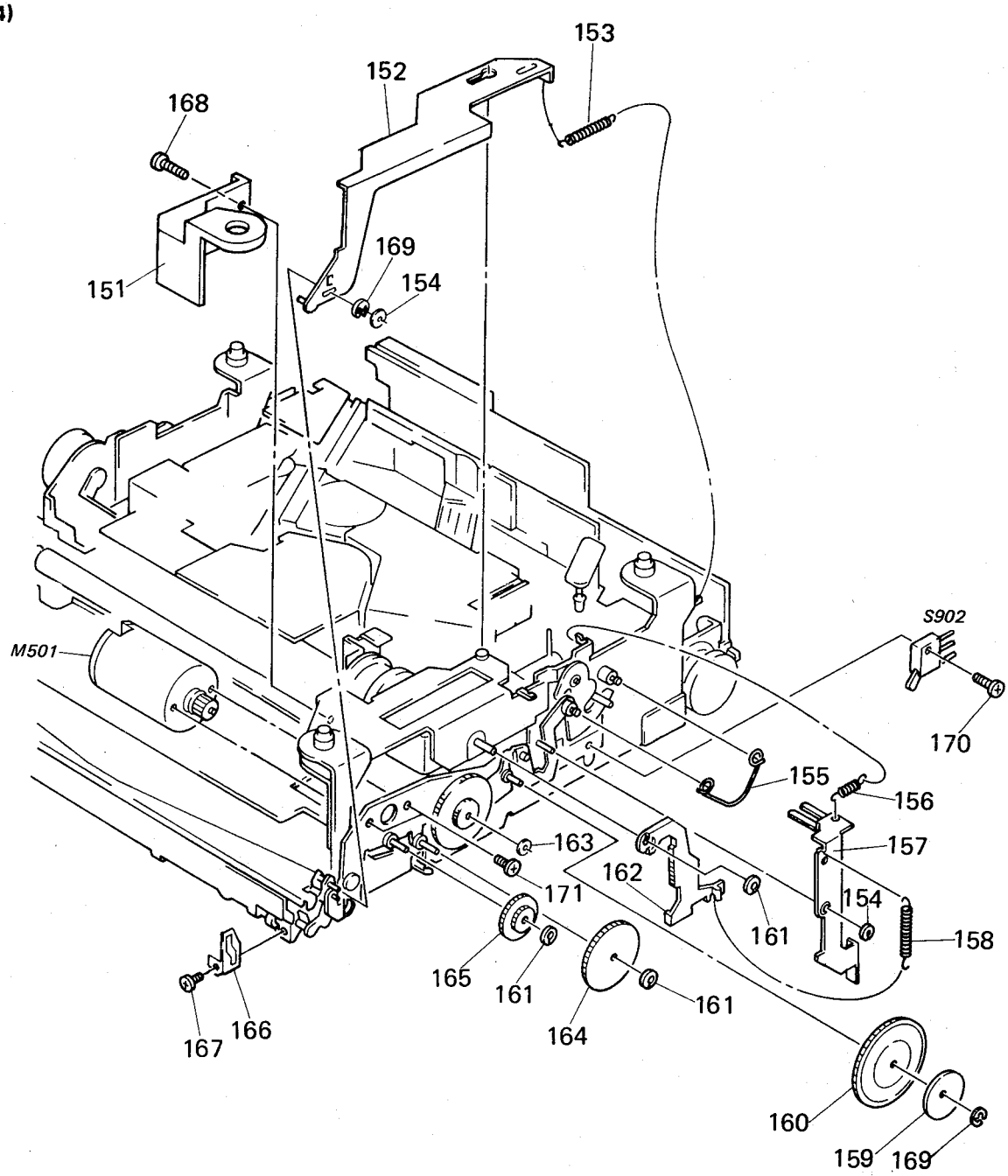


COMPACT DISC PLAYER

SONY®

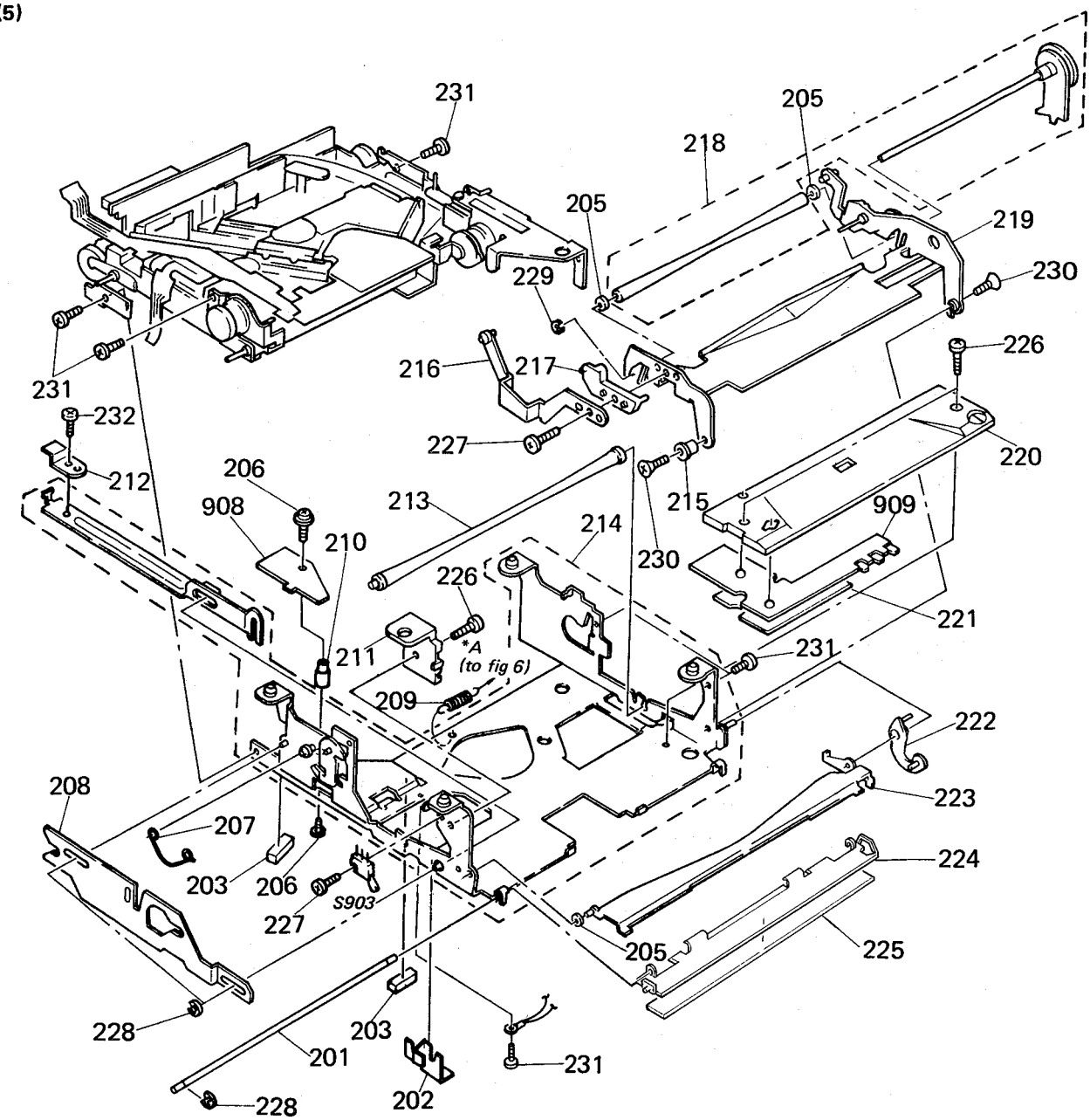
AUD

(4)



No.	Part No.	Description	Remarks
151	*3-320-533-03	HOLDER (A)	
152	X-3320-546-1	LEVER (S) ASSY, JOINT, P	
153	3-440-152-03	SPRING, TENSION	
154	3-578-265-11	WASHER, STOPPER	
155	3-323-243-05	SPRING	
156	3-323-246-01	SPRING, TENSION	
157	X-3320-547-1	LEVER (S) ASSY, RACK	
158	3-323-247-01	SPRING, TENSION	
159	3-320-521-01	SPRING	
160	3-320-552-01	GEAR, DOWN	
161	3-570-615-00	POLY-WASHER (DIA.1.2)	
162	3-320-574-04	RACK	
163	3-701-438-01	WASHER	
164	3-320-550-01	GEAR (B)	
165	3-320-549-01	GEAR (A)	
166	3-328-093-01	SPRING (S)	
167	3-703-816-01	SCREW (M1.4X2.0), SPECIAL HEAD	
168	7-621-255-25	SCREW +P 2X4	
169	7-624-101-01	RING, RETAINING E-1.2	
170	7-621-772-30	SCREW, PRECISION +P 2×4	
171	7-627-553-18	SCREW, PRECISION +P 2X2	
M501	A-3239-288-A	MOTOR ASSY	
S902	1-570-407-11	SWITCH, SLIDE (DOOR)	

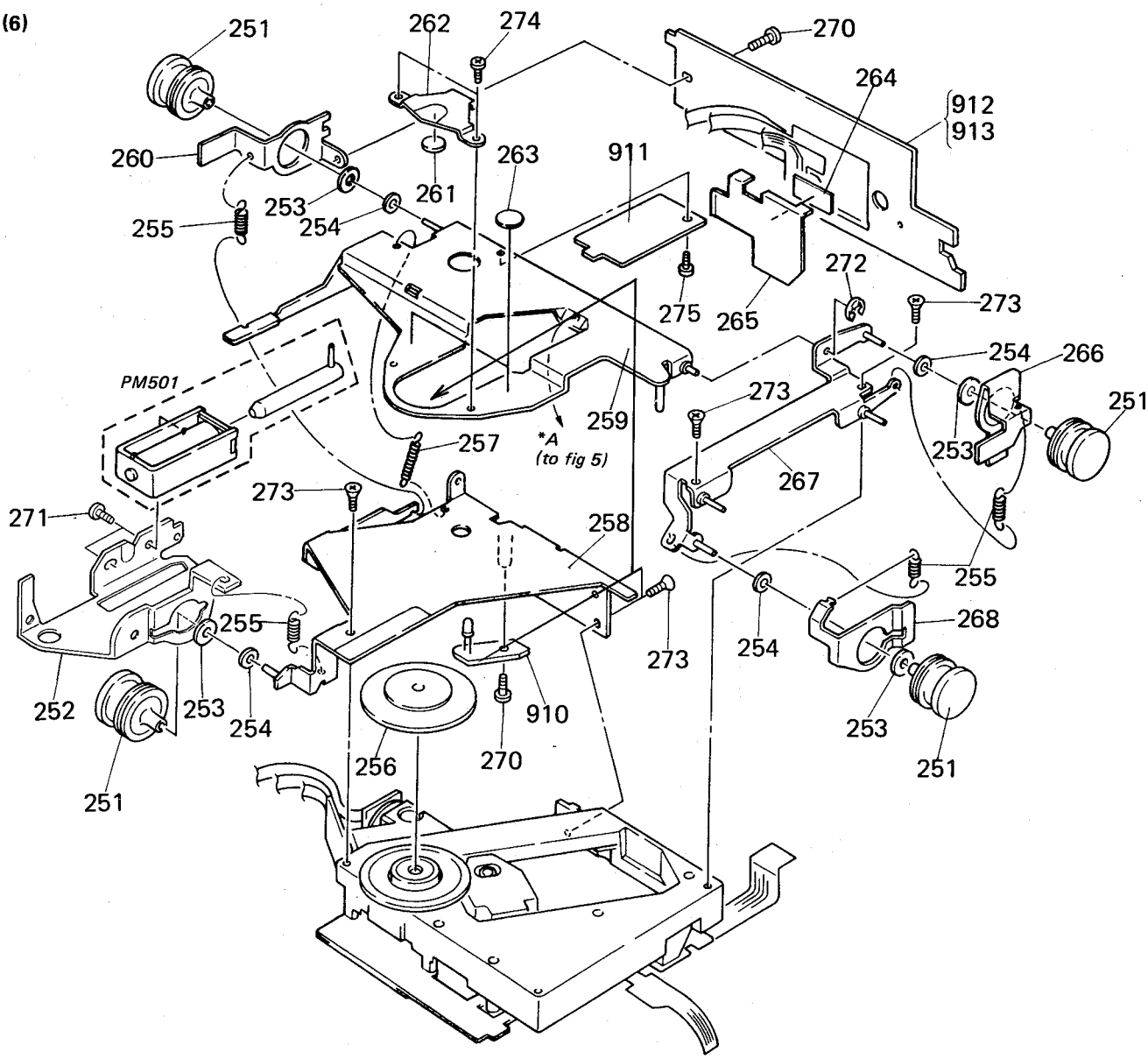
(5)



No.	Part No.	Description	Remarks
201	3-328-094-01	SHAFT (S), HINGE, DOOR	
202	*3-323-267-01	PROTECTOR	
203	9-911-840-XX	SPACER (A)	
204	.....		
205	3-701-438-31	WASHER	
206	3-703-502-31	SCREW	
207	3-323-243-05	SPRING	
208	*3-320-569-01	HOOK (B), LOCK	
209	3-642-490-00	SPRING, TENSION	
210	3-320-544-01	BOSS, SWITCH (A)	
211	*3-320-534-04	HOLDER (B)	
212	3-323-228-01	REFLECTOR, SW (A)	
213	X-3320-536-1	ROLLER (UPPER) ASSY	
214	X-3320-549-1	FRAME (S) ASSY, MD	
215	3-323-229-01	SHAFT (RIGHT), ROLLER ARM	
216	*X-3320-507-2	ARM ASSY, SUPPORT	
217	3-320-536-01	HOLDER, CONTACT SPRING	

No.	Part No.	Description	Remarks
218	A-3239-289-A	ROLLER (LOWER) ASSY	
219	X-3320-548-1	ARM (S) ASSY, DRIVING ROLLER	
220	3-320-567-01	GUIDE, DISK	
221	*3-323-230-01	SHEET, INSULATING	
222	X-3320-545-1	ARM (S) ASSY, DOOR	
223	X-3320-541-1	RETAINER (S) ASSY, DOOR	
224	X-3320-544-1	HINGE (S) ASSY, DOOR	
225	3-320-596-01	PLATE, ORNAMENTAL, DOOR	
226	7-621-255-25	SCREW +P 2X4	
227	7-621-772-30	SCREW +B 2X6	
228	7-624-101-01	RING, RETAINING E-1.2	
229	7-624-104-04	STOP RING 2.0, TYPE -E	
230	7-627-452-27	+K 2X4	
231	7-627-553-18	SCREW, PRECISION +P 2X2	
232	7-627-850-48	+P 1.4X1.6	
908	*1-613-707-11	PC BOARD, SWITCH (A)	
909	*1-614-164-11	PC BOARD, DET (B)	
S903	1-570-470-11	SWITCH, SLIDE (LOADING END)	

(6)



No.	Part No.	Description	Remarks
251	3-323-234-01	DAMPER (2), HYPER	
252	*X-3320-512-1	BRACKET (B) ASSY, INSULATOR	
253	3-323-263-01	WASHER, TEFLON	
254	3-323-240-01	WASHER, RUBBER	
255	3-662-752-11	SPRING, TENSION	
256	A-3239-290-A	PLATE SUB ASSY, CHUCK	
257	3-527-189-00	SPRING, TENSION	
258	*X-3320-510-1	CHASSIS (A) ASSY, MD FITTING	
259	*X-3320-502-1	ARM ASSY, CHUCKING	
260	*3-320-527-01	BRACKET (D), INSULATOR	
261	3-320-539-01	SHEET, THRUST, RETAINER	
262	3-320-514-01	RETAINER, THRUST	
263	3-323-290-02	CUSHION	
264	4-854-027-00	INSULATOR	

No.	Part No.	Description	Remarks
265	*3-323-261-01	RETAINER, FLEXIBLE	
266	*3-320-526-01	BRACKET (C), INSULATOR	
267	*X-3320-511-1	CHASSIS (B) ASSY, MD FITTING	
268	*3-320-525-01	BRACKET (A), INSULATOR	
270	7-621-255-25	SCREW +P 2X4	
271	7-621-775-08	SCREW +P 2.6X3	
272	7-624-102-04	STOP RING 1.5, TYPE-E	
273	7-627-452-18	SCREW, PRECISION +K 2X3	
274	7-627-552-18	SCREW, PRECISION +P 1.7X1.6	
275	7-627-553-28	SCREW, PRECISION +P 2X2.5	
910	*1-613-710-11	PC BOARD, LED (C)	
911	*1-613-709-11	PC BOARD, DET (C)	
912	*1-613-700-11	PC BOARD, RF AMPLIFIER	
913	*A-3279-419-A	PC BOARD ASSY, RF AMPLIFIER	
PM501	1-454-384-11	SOLENOID, PLUNGER (DOOR HOLD)	

Sony Corporation

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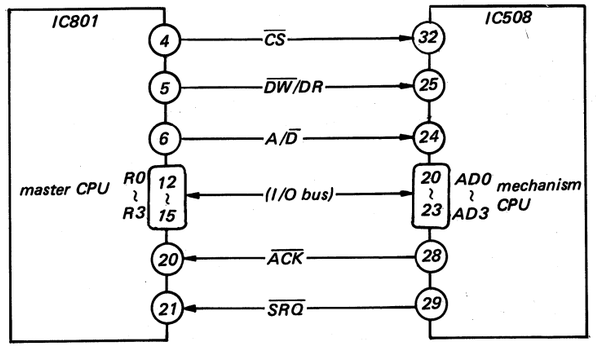
(MASTER CPU AND MECHANISM CPU)

This set uses a master CPU(IC801) which controls the system and a mechanism CPU(IC508) which controls the mechanism.

●INTERFACE BETWEEN MASTER CPU AND MECHANISM CPU

The master CPU(IC801) communicates with the mechanism CPU(IC508) to get information and command the mechanism in order to control the system by the following signals.



$\overline{CS}$:Chip Select.....This signal is sent out from the master CPU to command the mechanism CPU.

$\overline{DW}$/DR :Data write/Data Read.....The signal which indicates if the master CPU should write or read the DATA of the mechanism CPU.

A/$\overline{D}$ Address/Data.....Indicates if the signal on the bus line is an address signal or a data signal.

I/O buss.....4 bit bus line between the master CPU and the mechanism CPU.

$\overline{ACK}$:Acknowledge.....The signal which indicates to the master CPU that the mechanism CPU has received a CS signal and has executed the command.

$\overline{SRQ}$:Service Request.....The signal which indicates to the master CPU that DATA should be read out because a change has occurred.

● MASTER CPU IC508 PIN FUNCTIONS

MB88501-253M

PIN NO.	PIN NAME	I/O	FUNCTION
1	O2	O	Display data, key scan output
2	O3	O	Display data output
3	O4	O	
4	$\overline{CS}$	O	Mechanism control (IC508) signal output
5	$\overline{DW}$/DR	O	
6	A/D	O	
7	$\overline{BEEP}$	O	Buzzer drive signal output
8	A MUTE	O	Audio muting signal output
9	RESET	O	Reset signal output for display data decoder.
10	P3	O	Power switch signal for the servo circuit
11	(NC)		
12	R0	I/O	Mechanism control (IC508) address/data bus
13	R1	I/O	
14	R2	I/O	
15	R3	I/O	
16	START	I	ACC power voltage detect
17	(NC)		
18	VCC		POWER supply pin
19			
20	$\overline{ACK}$	I	Mechanism control (IC508) signal input
21	$\overline{SRQ}$	I	
22	COLOR CLK	O	Clock signal for display data decoder
23	R7		(Not used)
24	$\overline{RETURN}$	I	Return key signal input
25	R9	I	Sensor signal input for loading mechanism
26	R10	I	
27	R11		(Not used)
28	R12	I	Sensor signal input for loading mechanism.
29	R13	I	
30	(NC)		
31	$\overline{FSW}$	I	
32	K0 $\overline{0}$	I	Key matrix signal input
33	K1 $\overline{1}$	I	
34	K2 $\overline{2}$	I	
35	K3 $\overline{3}$	I	
36	EX		Crystal osc pin for clock
37	X		
38	$\overline{RESET}$	I/O	Reset pin
39	$\overline{IRQ}$	I	Remote signal input
40	—		
41	(NC)		
42	VSS		Ground terminal
43	—		
44	$\overline{SC/TO}$	O	(Not used)
45	SI	I	
46	SO	O	
47	O0	O	7 segments data for display
48	O1	O	

• MASTER CPU IC508 PIN FUNCTIONS

MB88501-253M

PIN NO.	PIN NAME	I/O	FUNCTION
1	O2	O	Display data, key scan output
2	O3	O	Display data output
3	O4	O	
4	$\overline{CS}$	O	Mechanism control (IC508) signal output
5	$\overline{DW}$/DR	O	
6	A/D	O	
7	$\overline{BEEP}$	O	Buzzer drive signal output
8	A MUTE	O	Audio muting signal output
9	RESET	O	Reset signal output for display data decoder.
10	P3	O	Power switch signal for the servo circuit
11	(NC)		
12	R0	I/O	Mechanism control (IC508) address/data bus
13	R1	I/O	
14	R2	I/O	
15	R3	I/O	
16	START	I	ACC power voltage detect
17	(NC)		
18	VCC		POWER supply pin
19			
20	$\overline{ACK}$	I	Mechanism control (IC508) signal input
21	$\overline{SRQ}$	I	
22	COLOR CLK	O	Clock signal for display data decoder
23	R7		(Not used)
24	$\overline{RETURN}$	I	Return key signal input
25	R9	I	Sensor signal input for loading mechanism
26	R10	I	
27	R11		(Not used)
28	R12	I	Sensor signal input for loading mechanism.
29	R13	I	
30	(NC)		
31	$\overline{FSW}$	I	
32	K0 $\overline{0}$	I	Key matrix signal input
33	K1 $\overline{1}$	I	
34	K2 $\overline{2}$	I	
35	K3 $\overline{3}$	I	
36	EX		Cfystal osc pin for clock
37	X		
38	$\overline{RESET}$	I/O	Reset pin
39	$\overline{IRQ}$	I	Remote signal input
40	—		
41	(NC)		
42	VSS		Ground terminal
43	—		
44	$\overline{SC}$/$\overline{TO}$	O	(Not used)
45	SI	I	
46	SO	O	
47	O0	O	7 segments data for display
48	O1	O	

• MECHANISM CPU (IC508) PIN FUNCTIONS

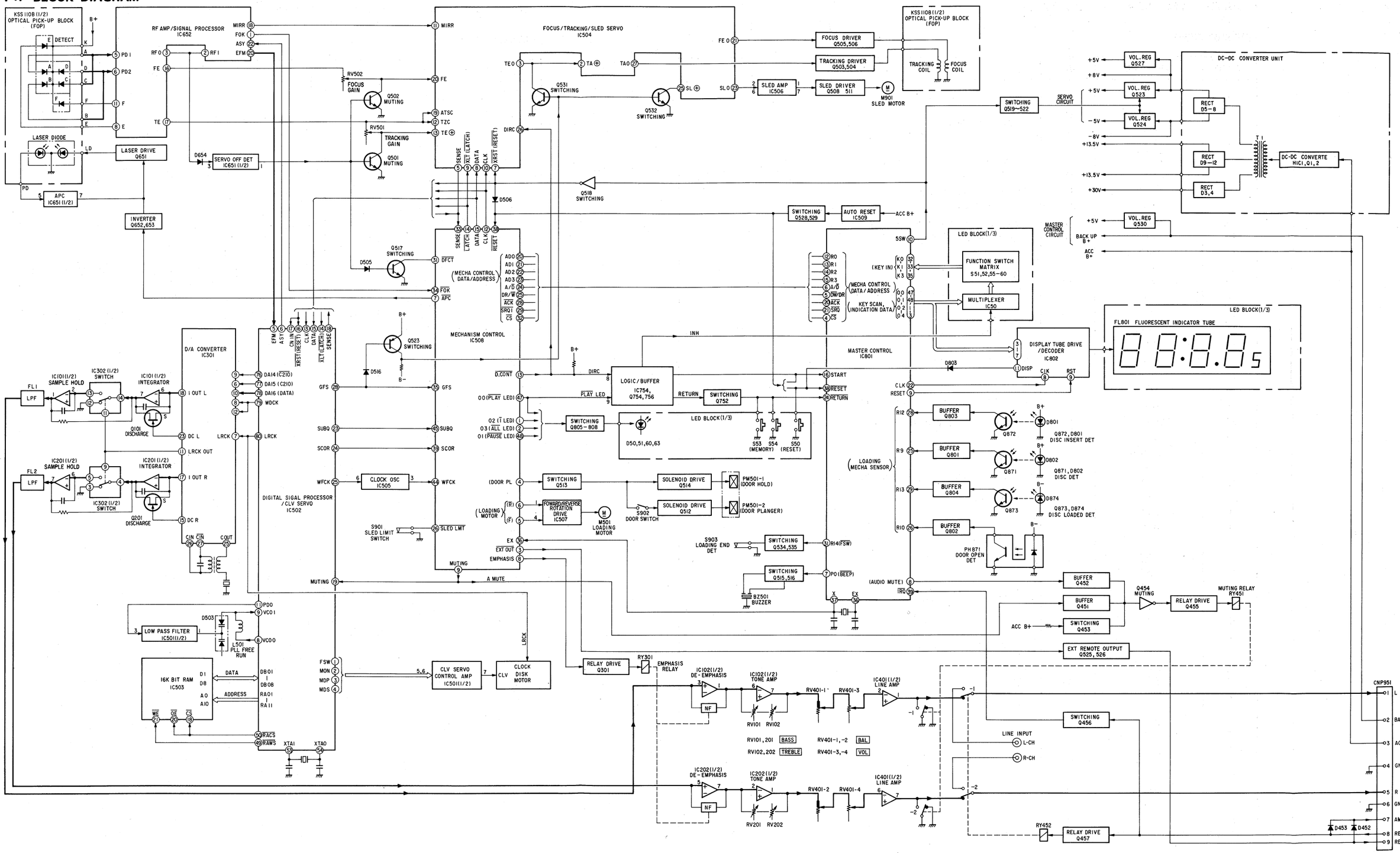
MB88501-274M

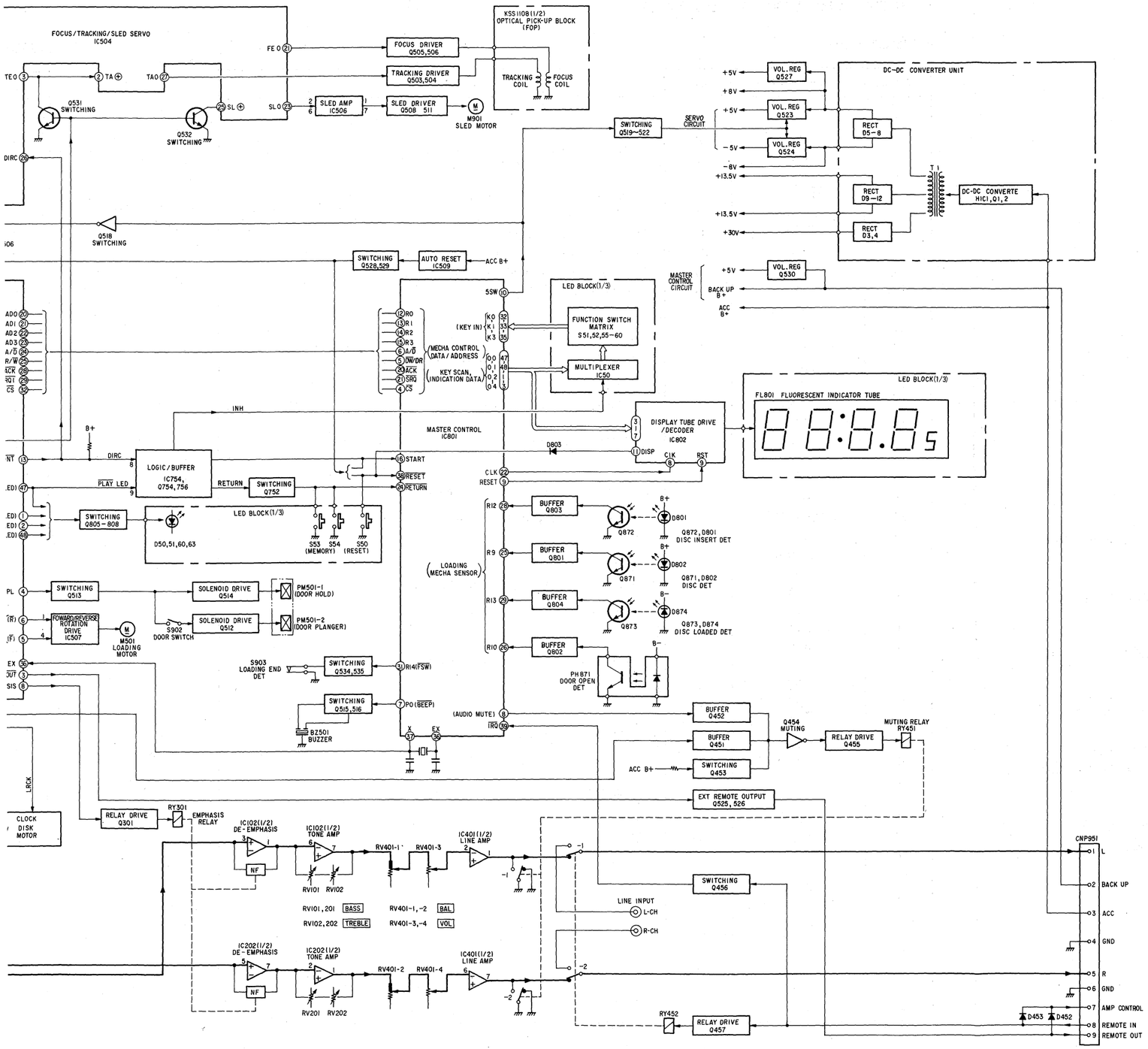
PIN NO.	PIN NAME	I/O	FUNCTION
1	O2 (T)	O	Output for "T" display
2	O3 (ALL)	O	Output for "ALL" display
3	$\overline{EXT\ OUT}$	O	Remote output control signal output
4	$\overline{DOOR\ PL}$	O	Door plunger control output
5	LD MT (F)	O	Loading motor control (Forward rotation/reverse rotation) output
6	LD MT (R)	O	
7	$\overline{APC}$	O	Laser diode ON/OFF output
8	EMPHASIS	O	Output for de-emphasis
9	D MUTE	O	Digital muting output
10	ATT		(Not used)
11	(NC)		
12	CLK	O	Digital signal processing IC (IC502)/servo IC (IC504) clock signal
13	$\overline{D\ CONT}$	O	Control signal output for servo IC (IC504)
14	$\overline{LATCH}$	O	DATA latch transmission
15	DATA	O	DATA (serial) output
16	$\overline{STBY}$	I	STBY signal input
17	(NC)		
18	VCC		Power supply pin
19	(NC)		
20	AD0	I/O	Master control (IC801) address/data bus
21	AD1	I/O	
22	AD2	I/O	
23	AD3	I/O	
24	A/$\overline{D}$	I	Master control (IC801) signal input
25	DR/$\overline{W}$	I	
26	$\overline{SLED\ LMT}$	I	Sled limit signal input
27	$\overline{DISC\ LD}$	I	(Connected to ground)
28	$\overline{ACK}$	O	Master control (IC801) signal output
29	$\overline{SRQI}$	O	
30	(NC)		
31	$\overline{DFCT}$	I	Scratched disc detect input
32	CS	I	Master control (IC801) signal input
33	SENSE	I	SENSE signal input
34	$\overline{F\ OK}$	I	FOK signal input
35	GFS	I	GFS signal input
36	EX	I	Clock signal input
37	X	O	(Not used)
38	$\overline{RESET}$	I/O	Reset pin
39	$\overline{SYNC}$	I	SCOR signal input
40	$\overline{DFCK}$		(Not used)
41	(NC)		
42	VSS		Ground pin
43	XC		(Not used)
44	WFCK	I	WFCK signal input (Time base of mechanism control)
45	SUB Q	I	SUB Q signal input
46	SD		(Not used)
47	O0 ($\overline{PLAY}$)	O	Output for "PLAY" display
48	O1 ($\overline{PAUSE}$)	O	Output for "PAUSE" display

CDX-5 CDX-5

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



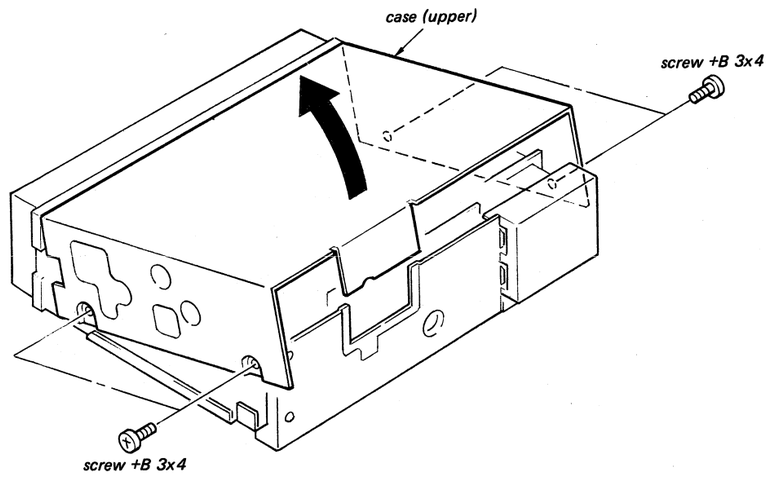

FOCUS/TRACKING/SLED SERVO IC504
KSS1108 (1/2) OPTICAL PICK-UP BLOCK (FOP)
FOCUS DRIVER Q505,506
TRACKING DRIVER Q503,504
TRACKING COIL
FOCUS COIL
SLED AMP IC506
SLED DRIVER Q508 511
M901 SLED MOTOR
Q531 SWITCHING
Q532 SWITCHING
Q518 SWITCHING
SWITCHING Q519~522
SERVO CIRCUIT
DC-DC CONVERTER UNIT
VOL. REG Q527
VOL. REG Q523
VOL. REG Q524
RECT D5-8
RECT D9-12
RECT D3,4
DC-DC CONVERTE HIC1,Q1,2
VOL. REG Q530
MASTER CONTROL CIRCUIT
SWITCHING Q528,529
AUTO RESET IC509
ACC B+
LED BLOCK(1/3)
FUNCTION SWITCH MATRIX S51,52,55~60
MULTIPLEXER IC50
(KEY IN)
(MECHA CONTROL DATA/ADDRESS)
(KEY SCAN, INDICATION DATA)
FL801 FLUORESCENT INDICATOR TUBE
DISPLAY TUBE DRIVE /DECODER IC802
MASTER CONTROL IC801
INH
LOGIC/BUFFER IC754, Q754,756
RETURN
SWITCHING Q752
PLAY LED
SWITCHING Q805~808
D50,51,60,63
S53 (MEMORY)
S54
S50 (RESET)
D803
CLK
RESET
BUFFER Q803
BUFFER Q801
BUFFER Q804
BUFFER Q802
LOADING MECHA SENSOR
Q872
Q871
Q873
D801
D802
D874
Q872,D801 DISC INSERT DET
Q871,D802 DISC DET
Q873,D874 DISC LOADED DET
PH871 DOOR OPEN DET
SWITCHING Q513
SOLENOID DRIVE Q514
SOLENOID DRIVE Q512
PM501-1 (DOOR HOLD)
PM501-2 (DOOR PLANGER)
FOWARD/REVERSE ROTATION DRIVE IC507
M501 LOADING MOTOR
S902 DOOR SWITCH
S903 LOADING END DET
SWITCHING Q534,535
SWITCHING Q515,516
BZ501 BUZZER
(AUDIO MUTE)
BUFFER Q452
BUFFER Q451
SWITCHING Q453
Q454 MUTING
RELAY DRIVE Q455
MUTING RELAY RY451
EXT REMOTE OUTPUT Q525,526
CLOCK DISK MOTOR
RELAY DRIVE Q301
RY301 EMPHASIS RELAY
IC102(1/2) DE-EMPHASIS
IC102(1/2) TONE AMP
IC401(1/2) LINE AMP
RV401-1
RV401-3
RV101 RV102
RV101,201 BASS
RV102,202 TREBLE
RV401-1,-2 BAL
RV401-3,-4 VOL
LINE INPUT
L-CH
R-CH
SWITCHING Q456
IC202(1/2) DE-EMPHASIS
IC202(1/2) TONE AMP
IC401(1/2) LINE AMP
RV401-2
RV401-4
RV201 RV202
RY452
RELAY DRIVE Q457
CNP951
L
BACK UP
ACC
GND
R
GND
AMP CONTROL
REMOTE IN
REMOTE OUT
D453
D452

MEMO

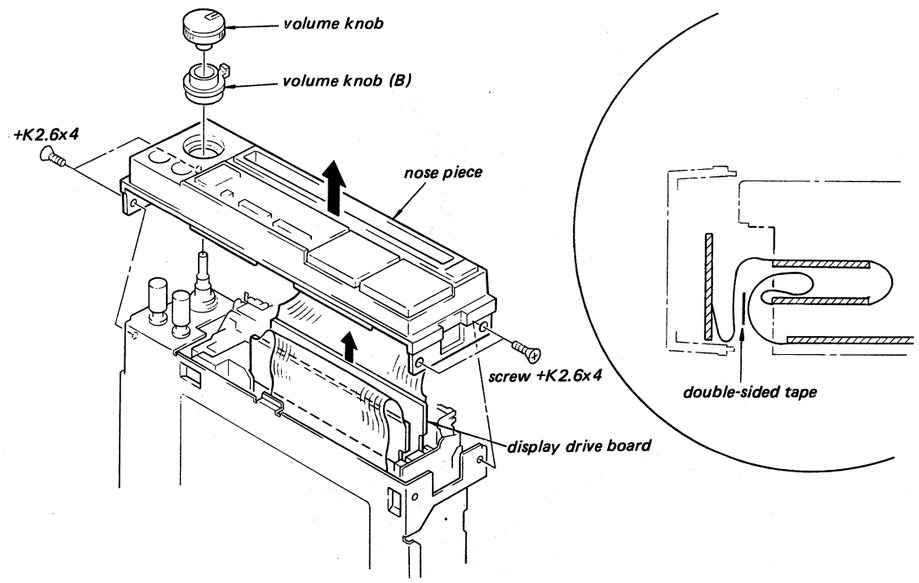
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

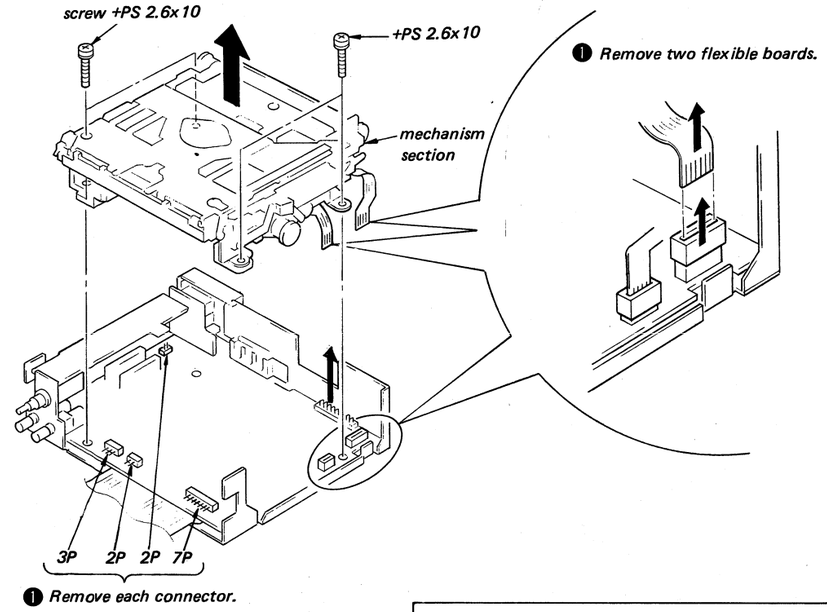
[CASE (UPPER)]



[NOSE PIECE/DISPLAY DRIVE BOARD]

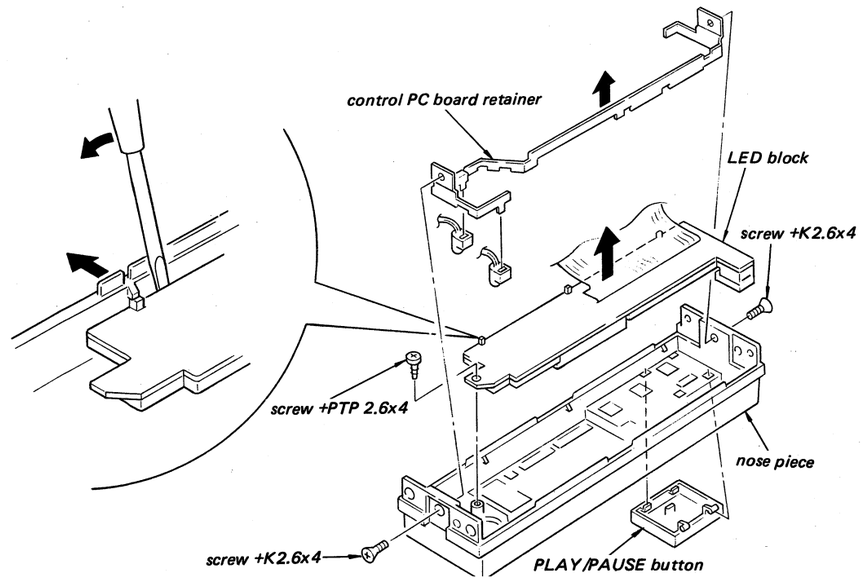


[MECHANISM SECTION]

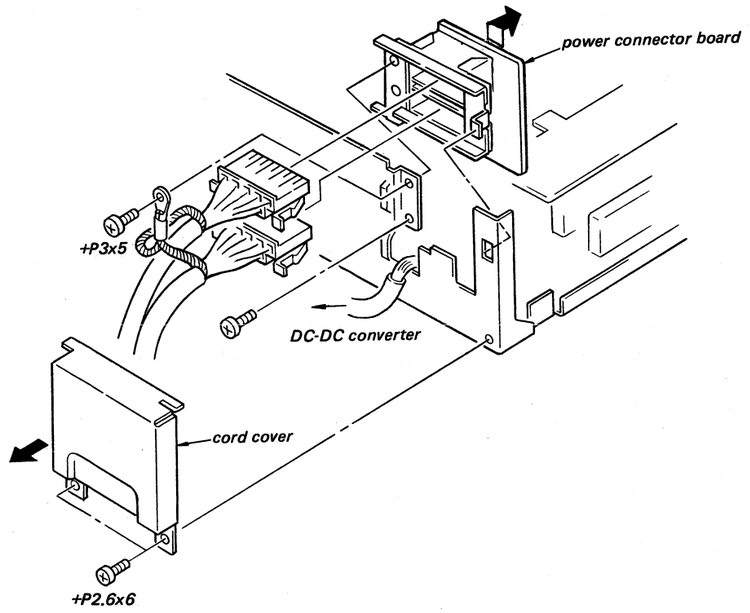


- *The set can be operated with the mechanism removed by using the reserved extension connector.*

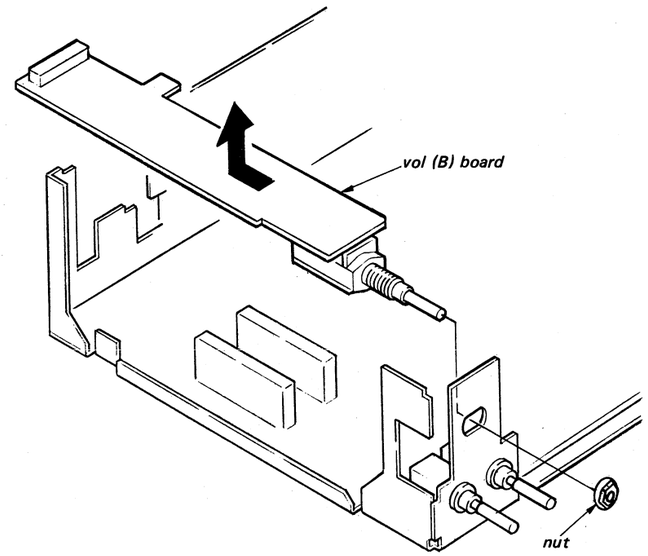
[LED BLOCK]



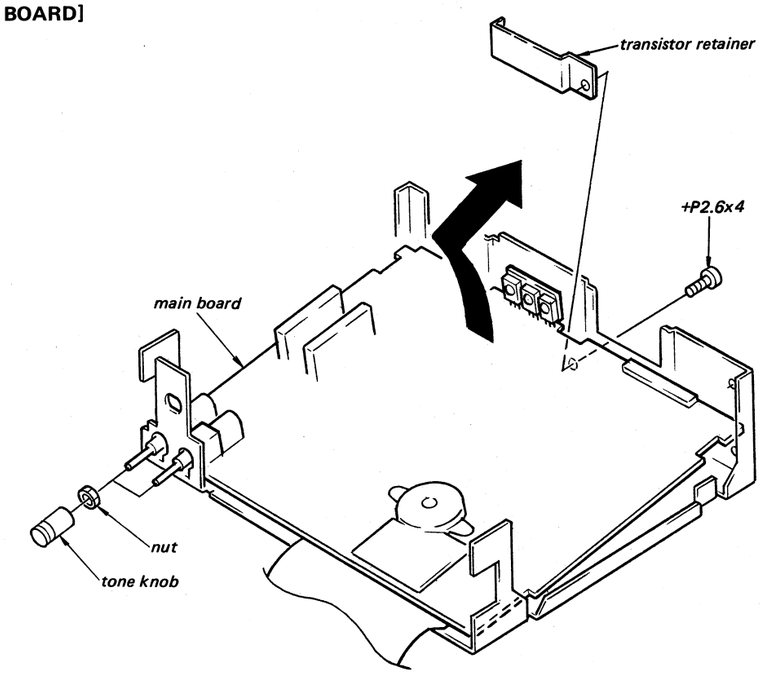
[POWER CONNECTOR BOARD]



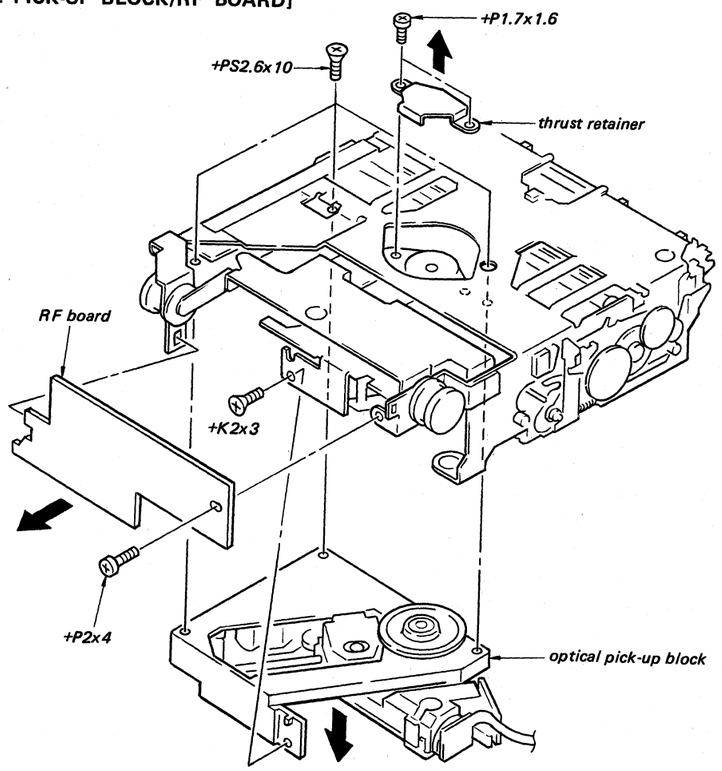
[VOL (B) BOARD]



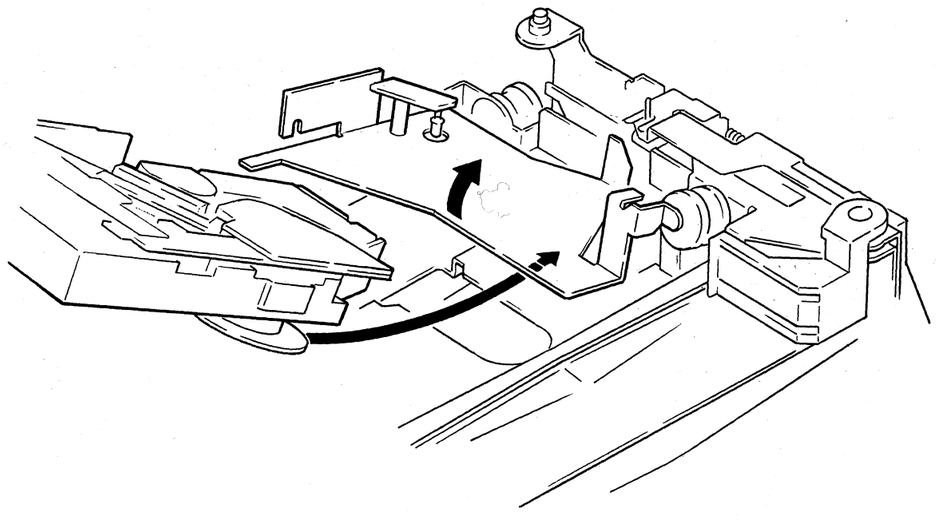
[MAIN BOARD]



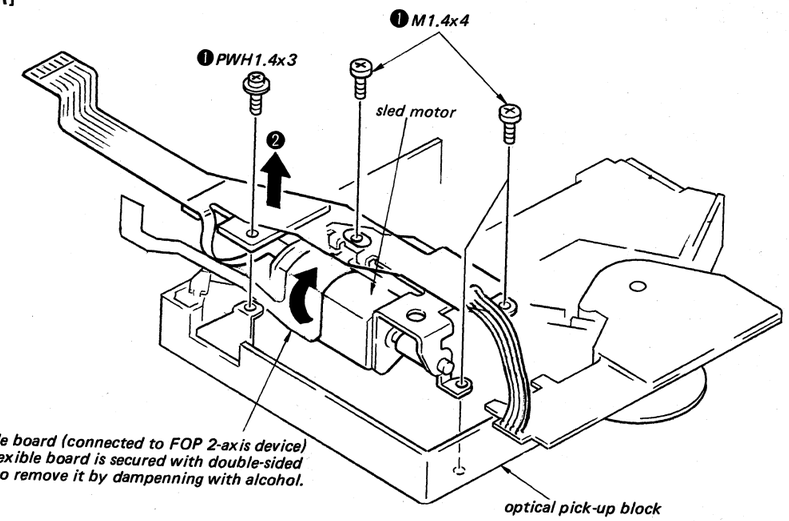
[OPTICAL PICK-UP BLOCK/RF BOARD]



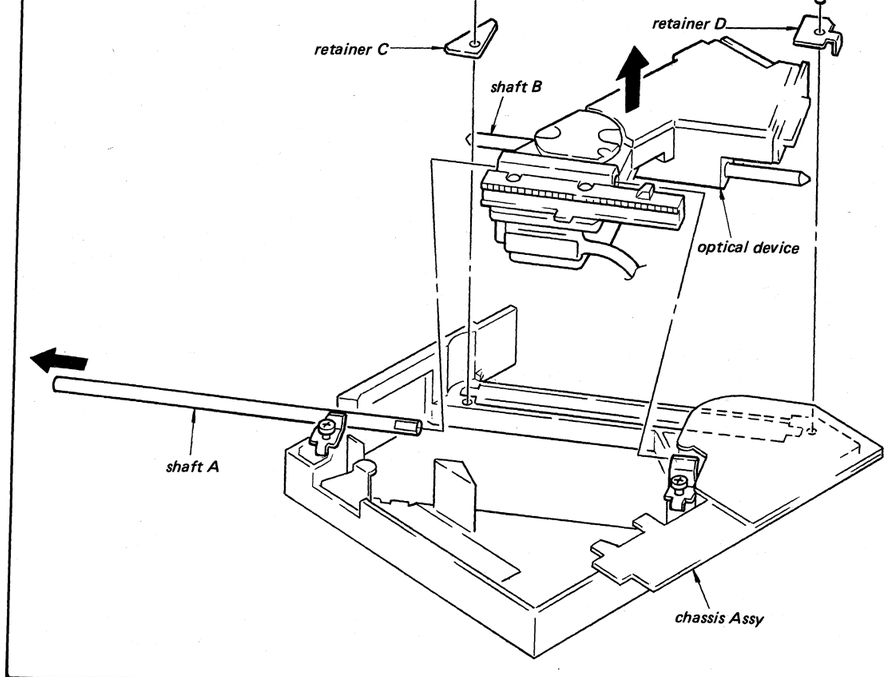
- **Reinstallation**



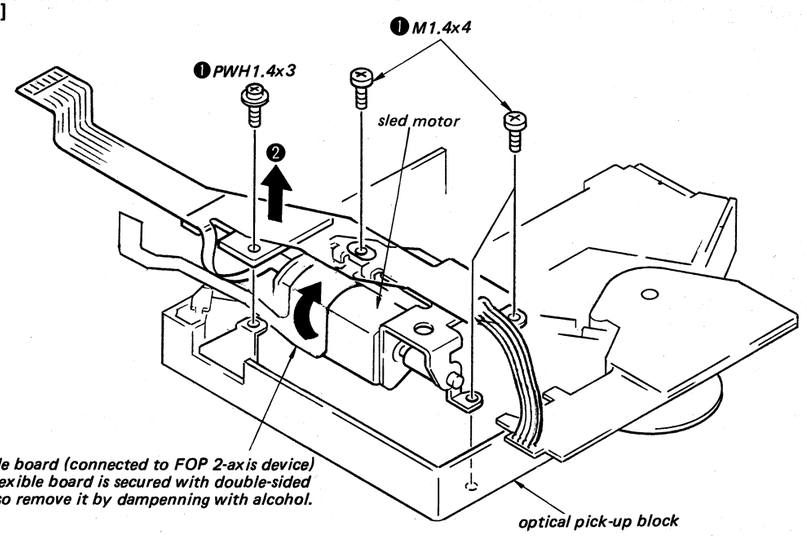
[SLED MOTOR]


❶ M1.4x4
❶ PWH1.4x3
sled motor
❷
❸ flexible board (connected to FOP 2-axis device)
• The flexible board is secured with double-sided tape, so remove it by dampenning with alcohol.
optical pick-up block

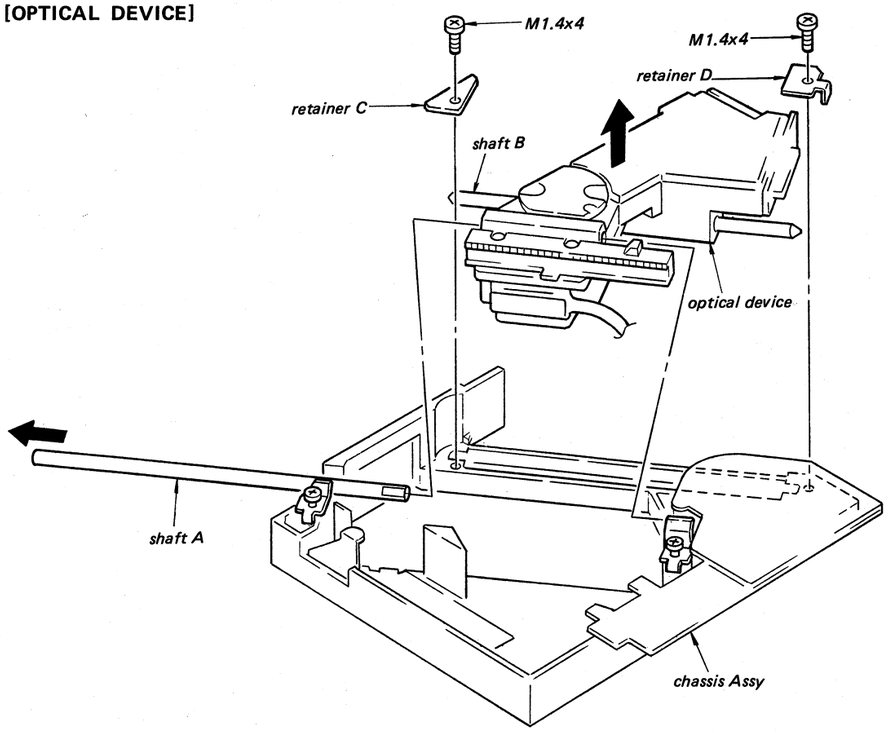
[OPTICAL DEVICE]



[SLED MOTOR]

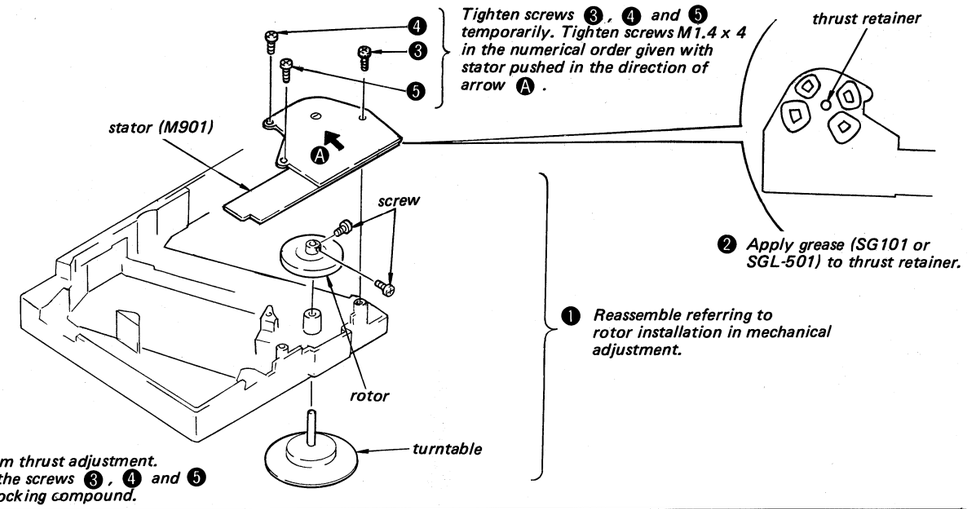

❶ M1.4x4
❶ PWH1.4x3
sled motor
❷
❸ flexible board (connected to FOP 2-axis device)
• The flexible board is secured with double-sided tape, so remove it by dampenning with alcohol.
optical pick-up block

[OPTICAL DEVICE]

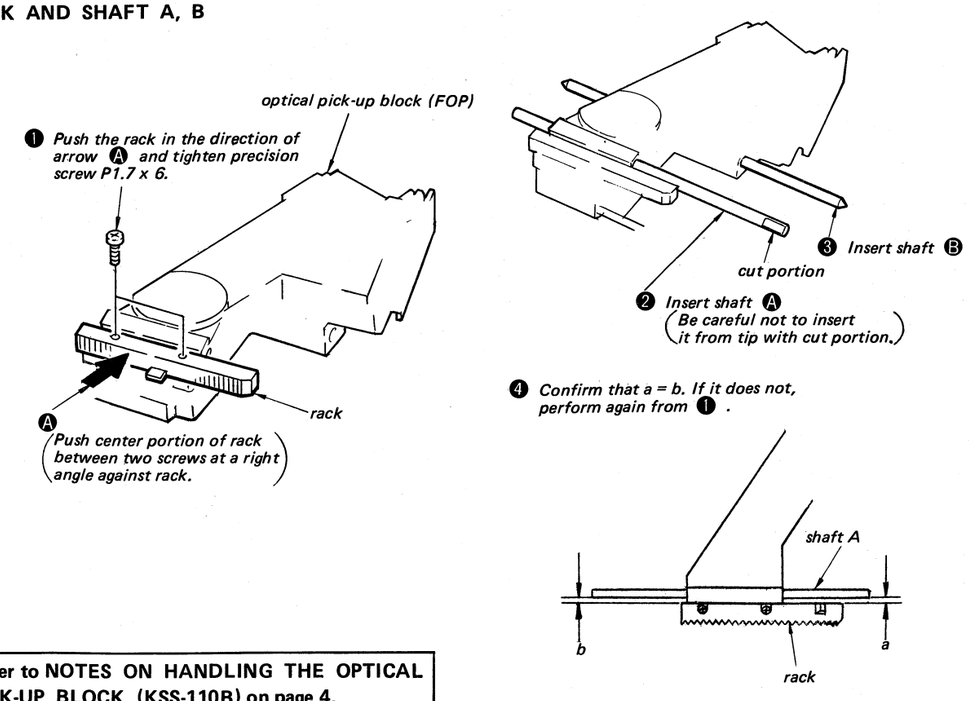


2-1. MECHANISM REASSEMBLY

ROTOR AND STATOR


❹
❸
❺
Tighten screws ❸, ❹ and ❺ temporarily. Tighten screws M1.4 x 4 in the numerical order given with stator pushed in the direction of arrow Ⓐ.
thrust retainer
stator (M901)
Ⓐ
screw
❷ Apply grease (SG101 or SGL-501) to thrust retainer.
❶ Reassemble referring to rotor installation in mechanical adjustment.
rotor
turntable
❻ Perform thrust adjustment.
❼ Lock the screws ❸, ❹ and ❺ with locking compound.

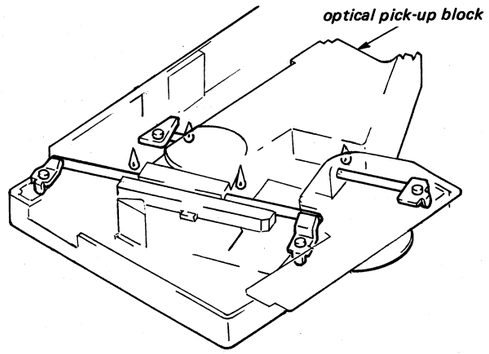
RACK AND SHAFT A, B


optical pick-up block (FOP)
❶ Push the rack in the direction of arrow Ⓐ and tighten precision screw P1.7 x 6.
rack
Ⓐ
Push center portion of rack between two screws at a right angle against rack.
❸ Insert shaft Ⓑ
cut portion
❷ Insert shaft Ⓐ
Be careful not to insert it from tip with cut portion.
❹ Confirm that a = b. If it does not, perform again from ❶.
shaft A
b
a
rack

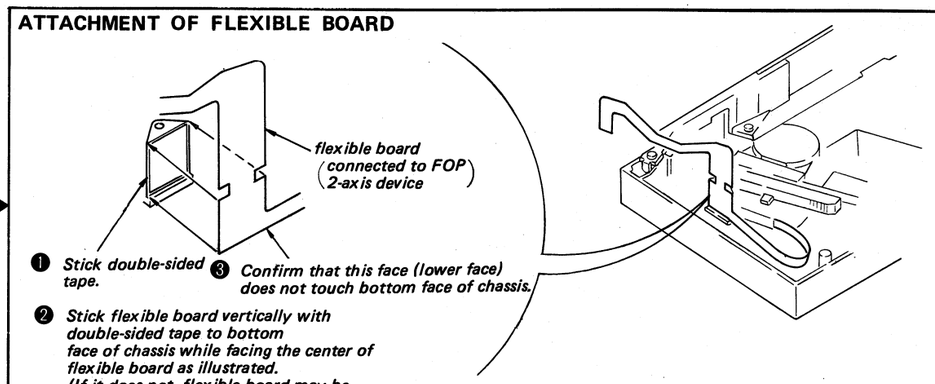
Refer to NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (KSS-110B) on page 4.

LUBRICATION TO SHAFTS A, B

❶ *Apply a drop of hydro fluid EP-56 (part no. 7-661-018-01) to four portions marked 🛢.*
❷ *Move FOP right and left two or three times to smooth them.*
❸ *Lift up the mechanism and incline it in the right or left direction. Confirm that FOP is moved smoothly with itself-weight.*



ATTACHMENT OF FLEXIBLE BOARD



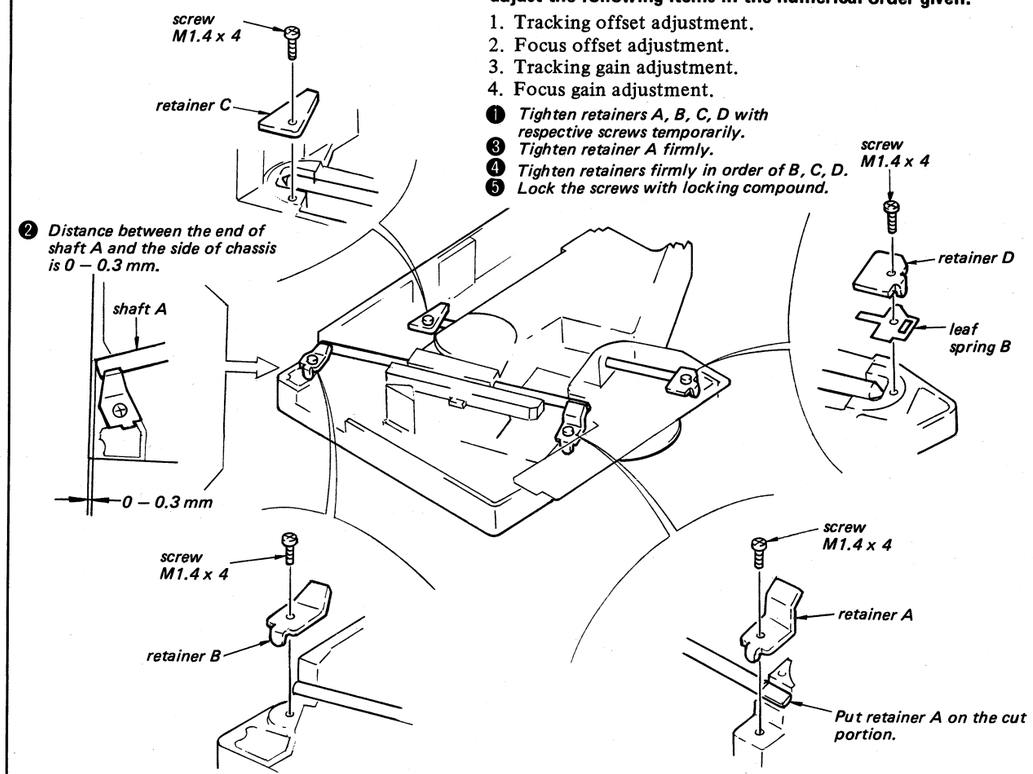
❶ *Stick double-sided tape.*
❸ *Confirm that this face (lower face) does not touch bottom face of chassis.*
❷ *Stick flexible board vertically with double-sided tape to bottom face of chassis while facing the center of flexible board as illustrated. (If it does not, flexible board may be touched to bottom of chassis.)*

OPTICAL PICK-UP BLOCK (FOP)

When replacing optical pick-up block, confirm and adjust the following items in the numerical order given.

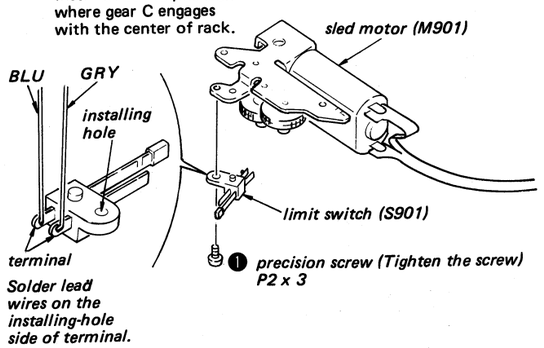
1. Tracking offset adjustment.
2. Focus offset adjustment.
3. Tracking gain adjustment.
4. Focus gain adjustment.

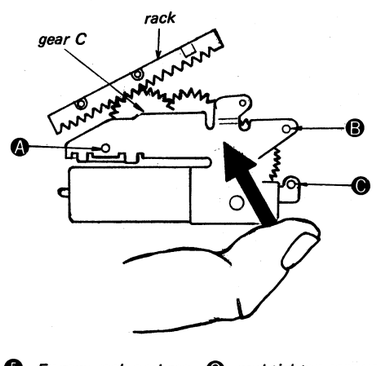
❶ *Tighten retainers A, B, C, D with respective screws temporarily.*
❸ *Tighten retainer A firmly.*
❹ *Tighten retainers firmly in order of B, C, D.*
❺ *Lock the screws with locking compound.*



SLED MOTOR

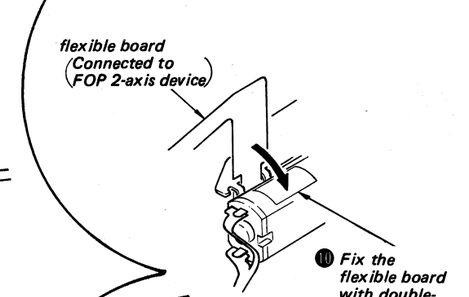
Note: Sled motor should be installed at the position where gear C engages with the center of rack.

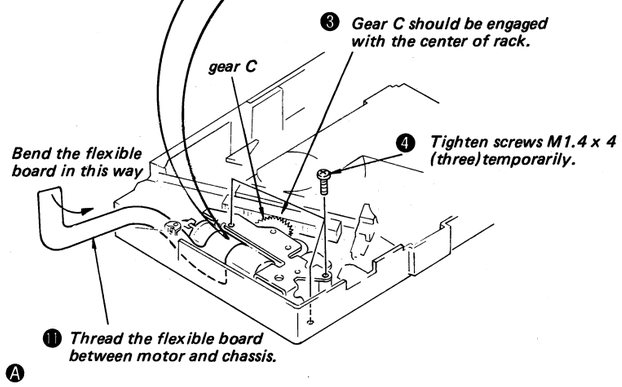




❺ *Engage rack and gear Ⓒ and tighten screws Ⓐ and Ⓑ while pushing sled motor in the direction of arrow (at a right angle against rack) with about 300 g tension.*
❻ *Tighten screw Ⓒ firmly.*

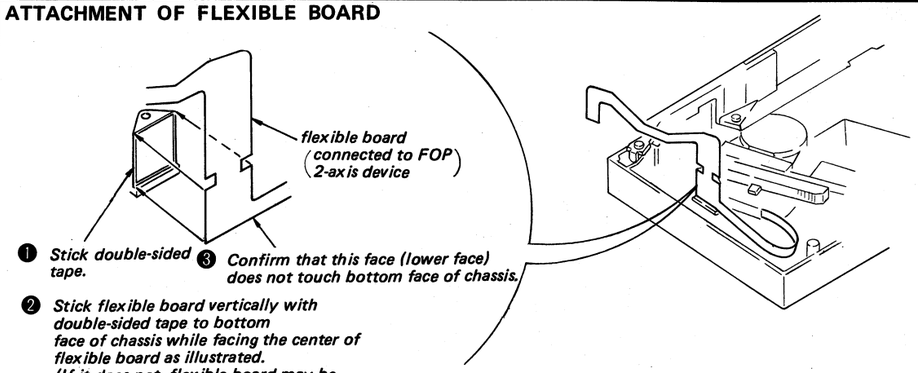
❷ *Thread the flexible board from FOP through the location illustrated.*




❸ Gear C should be engaged with the center of rack.
gear C
Bend the flexible board in this way
❹ Tighten screws M1.4 x 4 (three) temporarily.
⓫ Thread the flexible board between motor and chassis.

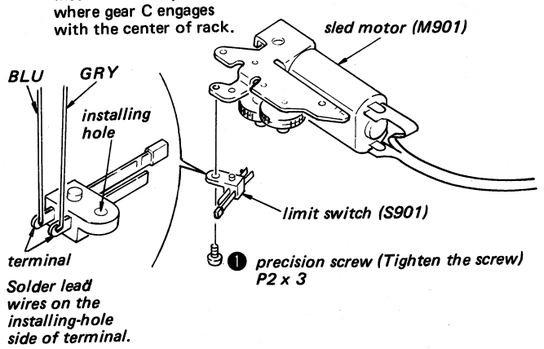
❼ *Check backlash.*
❽ *Check sled motor response.*
❾ *Apply locking compound to Ⓐ, Ⓑ and Ⓒ.*

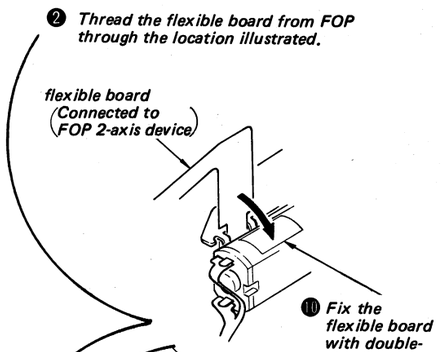
ATTACHMENT OF FLEXIBLE BOARD

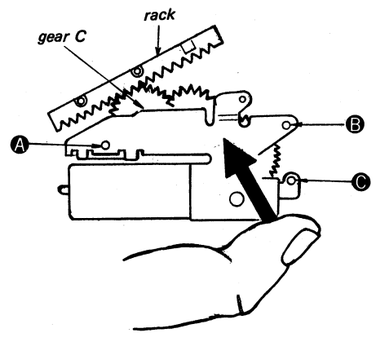

flexible board (connected to FOP) 2-axis device
❶ Stick double-sided tape.
❸ Confirm that this face (lower face) does not touch bottom face of chassis.
❷ Stick flexible board vertically with double-sided tape to bottom face of chassis while facing the center of flexible board as illustrated. (If it does not, flexible board may be touched to bottom of chassis.)

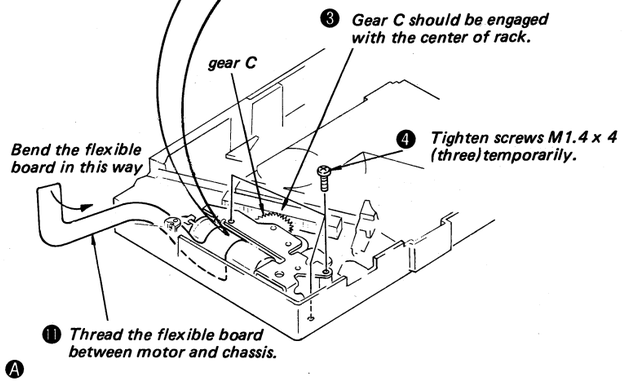
SLED MOTOR

Note: Sled motor should be installed at the position where gear C engages with the center of rack.




❷ Thread the flexible board from FOP through the location illustrated.
flexible board (Connected to FOP 2-axis device)
❿ Fix the flexible board with double-sided tape.




❸ Gear C should be engaged with the center of rack.
gear C
Bend the flexible board in this way
❹ Tighten screws M1.4 x 4 (three) temporarily.
⓫ Thread the flexible board between motor and chassis.

❺ Engage rack and gear Ⓒ and tighten screws Ⓐ and Ⓑ while pushing sled motor in the direction of arrow (at a right angle against rack) with about 300 g tension.
❻ Tighten screw Ⓒ firmly.
❼ Check backlash.
❽ Check sled motor response.
❾ Apply locking compound to Ⓐ, Ⓑ and Ⓒ.

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

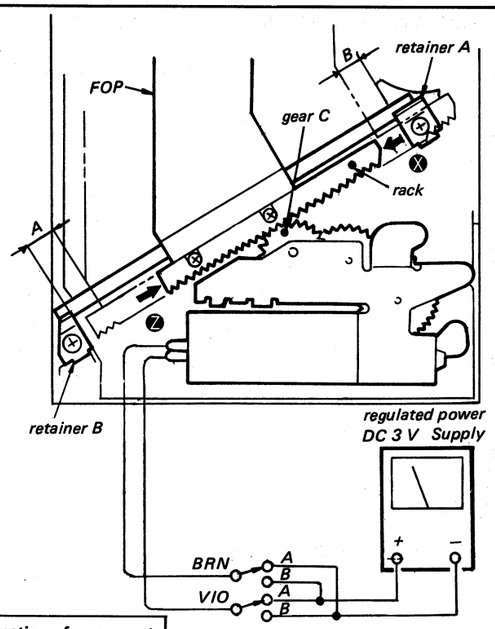
Backlash Check

Measuring Locations:

Outer circumference: Location where dimension A in the figure at right (space between FOP and press plate B) is 3-5 mm.

Middle: Location where gear C engagement point is at the center of the rack.

Inner circumference: Where dimension B at right (space between FOP and retainer A) is 3-5 mm.



Measuring Procedure:

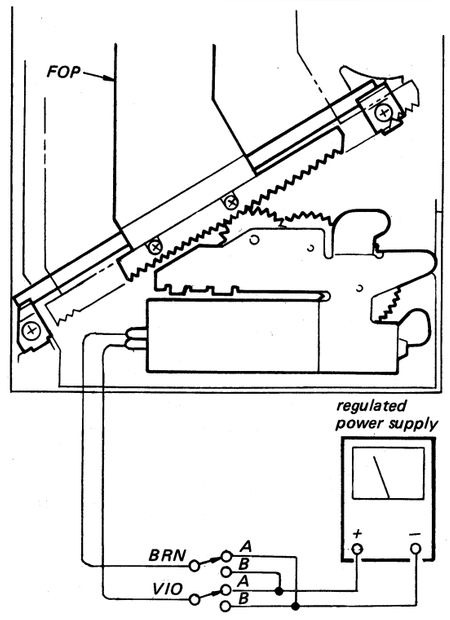
1. Apply 3 V to sled motor lead and move the FOP to the measuring location. (Refer to figure).
2. At each measuring location, check that there is no movement in the directions of the arrows marked Ⓧ and Ⓩ when 50 g (2 oz) is applied to a fan-shaped tension gauge.
3. If there is movement, sled motor mounting should be redone. (Sled Motor Assembly.)

Switch position	Direction of movement	Switch position	Direction of movement
side A	inner to outer circumference	side B	outer to inner circumference

Sled Motor Response Check

If the following check is not satisfied, replace the sled motor (M901).

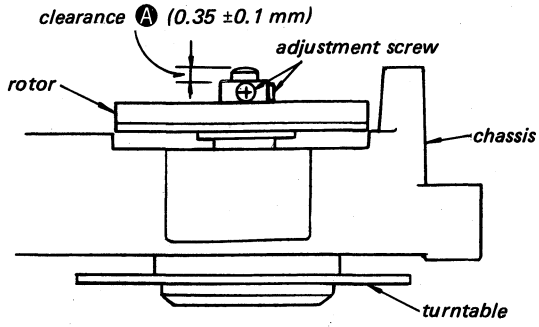
- **Minimum Activation Voltage Check.**
  1. Apply 1.5 V and check that the FOP moves smoothly from the inner to the outer circumference.
  2. Next apply 2 V and check that the FOP moves smoothly from the outer to the inner circumference.
- **Sled Sending Current Check**
  1. Apply 3 V and move the FOP from the innermost to the outermost circumference. Check that current value is less than 120 mA at this time.
  2. Next move the FOP from the outermost to the innermost circumference. Check that current value is less than 150 mA at this time.
- **Sled Sending Time Check**
  Apply 3 V, and check that the time for the FOP to move from the innermost to the outermost circumference and from the outermost to the innermost circumference is less than 5 seconds each.



Switch position	Direction of movement	Switch position	Direction of movement
side A	inner to outer circumference	side B	outer to inner circumference

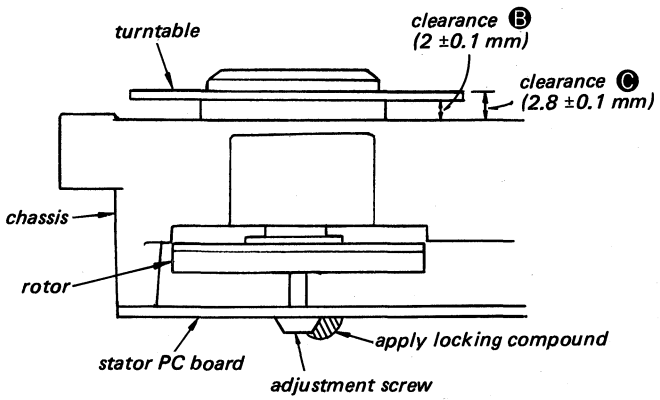
Rotor Mounting, Thrust Adjustment

- **Rotor Mounting**



Mount the rotor on the turntable shaft so that the clearance Ⓐ above is 0.35 ±0.1 mm.

- **Thrust Adjustment**



Adjust the adjustment screw so that clearance Ⓑ and Ⓒ above are as follows:

Ⓑ : 2 ±0.1 mm

Ⓒ : 2.8 ±0.1 mm

Apply locking compound after adjustment.

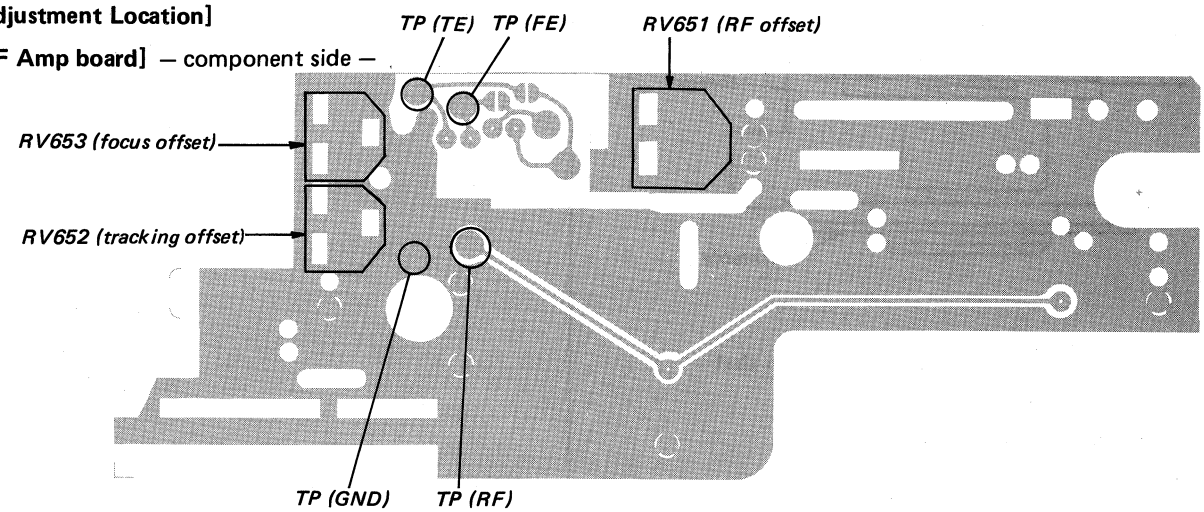
3-2. ELECTRICAL ADJUSTMENT

[NOTE ON ADJUSTMENT]

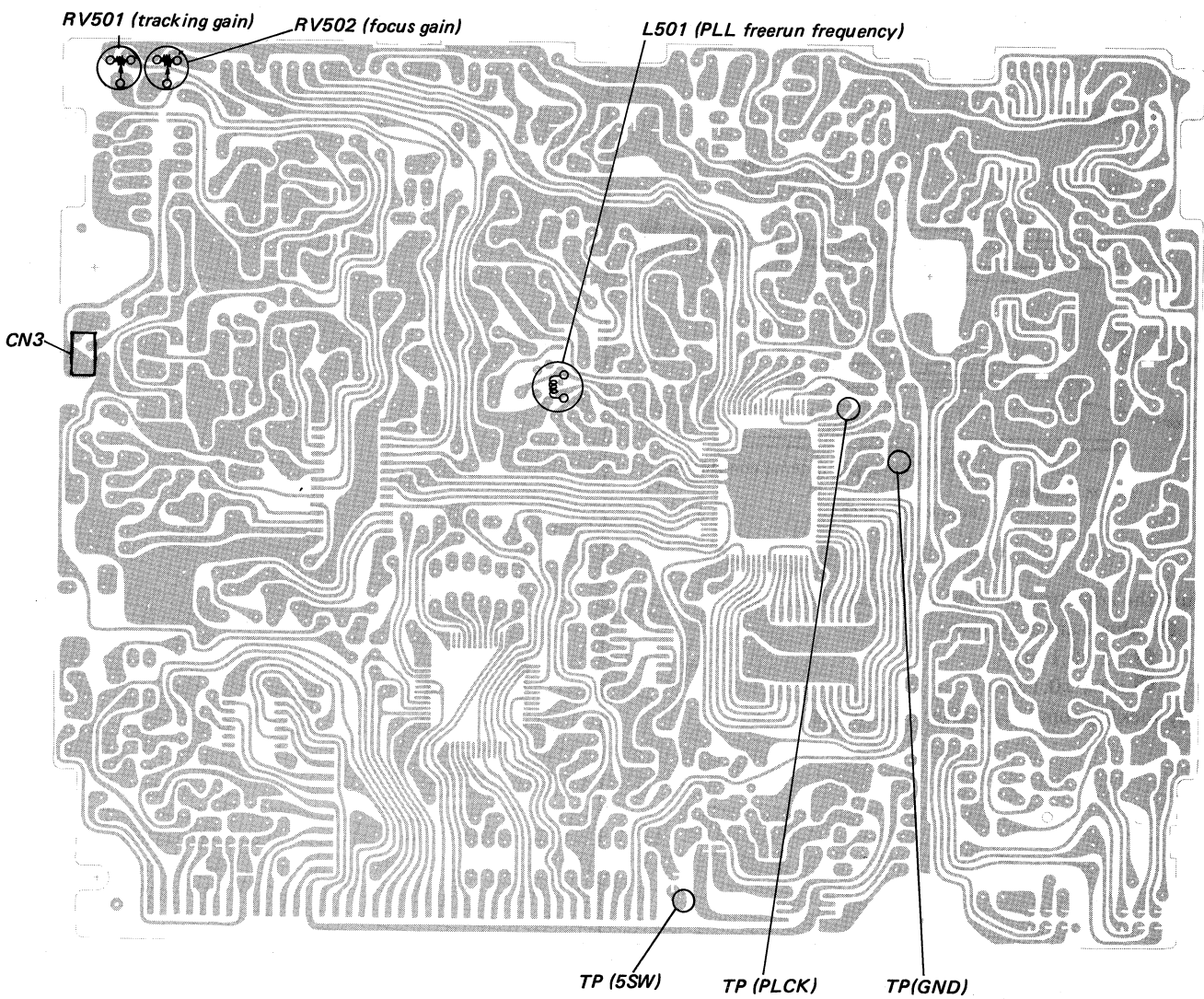
1. The adjustment should be performed with the set placed horizontally.
2. Use YEDS-1 disc unless otherwise specified.
3. Supply voltage: DC 14.4 V (more than 2 A)

[Adjustment Location]

[RF Amp board] – component side –

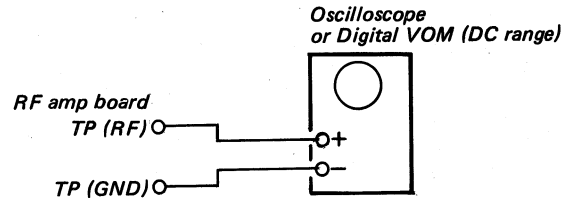


[Main board] *–conductor side–*



[RF OFFSET ADJUSTMENT]

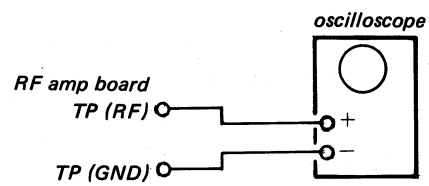
Procedure:



1. Remove the connector (CN3) on the main board.
2. Connect oscilloscope or digital VOM to the test points (RF), (GND) on the RF amp board.
3. Insert disc (YEDS-1) and press ▶ PLAY button.
4. The disc is ejected from the set in a few seconds. Adjust RV651 on the RF amp board so that the digital voltmeter reading is −100mV ±10mV during the time before the disc is ejected.
5. After the adjustment, reconnect the CN3 connector.

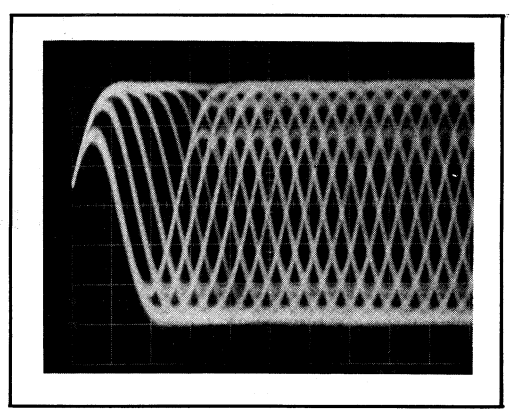
[FOCUS OFFSET ADJUSTMENT]

Procedure:



1. Connect the oscilloscope to the test points (RF) (GND) on the RF amp board.
2. Insert the disc (YEDS-1) and press ▶ PLAY button.
3. Adjust RV653 on the RF amp board so that the oscilloscope waveform eye pattern is good. A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

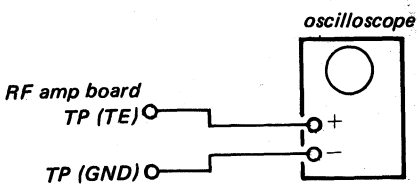
Volt/Div : 200mV
Time/Div : 0.5μSec



[TRACKING OFFSET ADJUSTMENT]

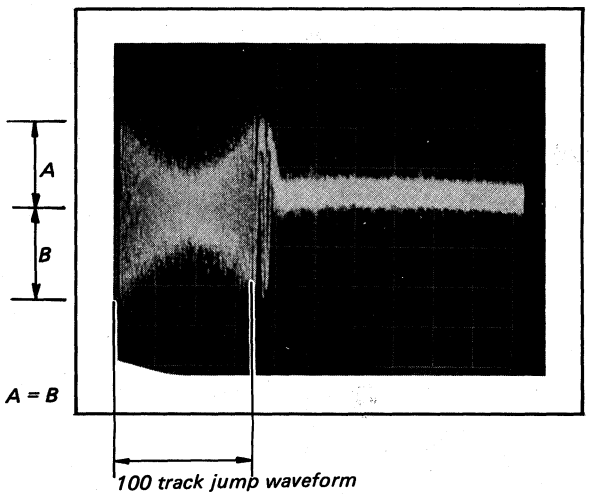
– Coarse Adjustment –

Procedure:



1. Connect the oscilloscope to the test points (TE), (GND) on the RF amp board.
2. Insert the disc (YEDS-1) and press ▶ PLAY button.
3. Press AMS|◀◀, ▶▶| key or ↳▶button and observe the oscilloscope waveform for track jump.
4. Adjust RV 652 on the RF amp board so that the oscilloscope waveform of 100 track jump is symmetrical above and below, relative to 0V.

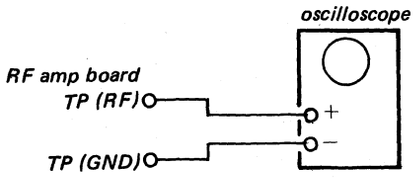
Volt/Div : 1V
Time/Div : 0.2mSec
Center 0V



[TRACKING GAIN ADJUSTMENT]

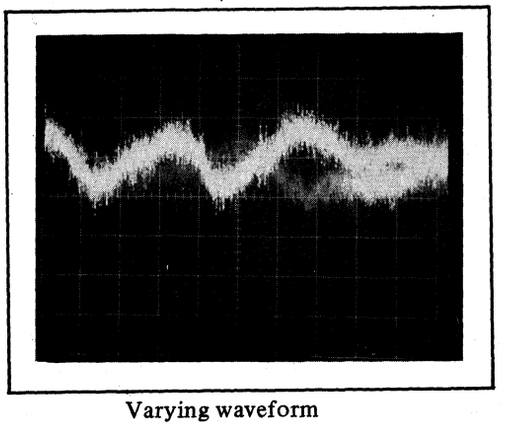
- This adjustment should be performed when replacing the following components.
  - FOP
  - RV501
- This adjustment should be performed after the focus offset adjustment and the tracking offset adjustment.

Procedure:

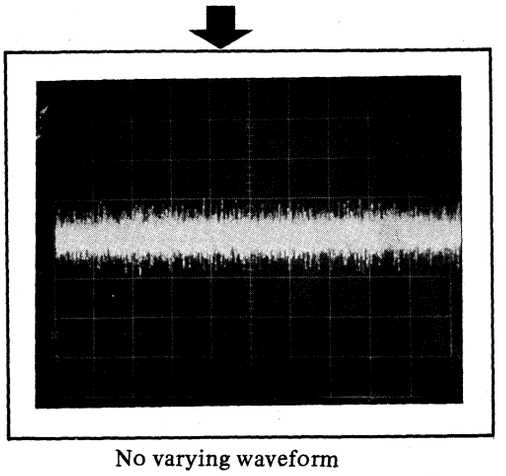


1. Connect the oscilloscope to the test points (TE) and (GND) on the RF amp board.
2. Insert the disc (YEDS-1) and press ▶ PLAY button.
3. Turn RV501 on the main board clockwise from left side and observe the waveform on the oscilloscope. Adjust RV501 until the fundamental waveform disappears (no large waves).

Volt/Div : 1V
Time/Div : 2mSec



Varying waveform



No varying waveform

[FOCUS GAIN ADJUSTMENT]

– Coarse Adjustment –

This adjustment should be performed when replacing the following components.

- FOP
- RV502

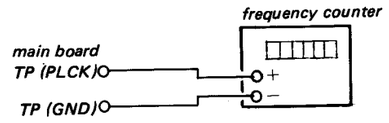
Procedure:

1. Set RV502 on the main board to mechanical center.
2. Check that there is not an abnormal amount of operation noise (white noise) from the 2-axis device. If there is, turn RV502 slightly counterclockwise.

[PLL FREE-RUN FREQUENCY CHECK]

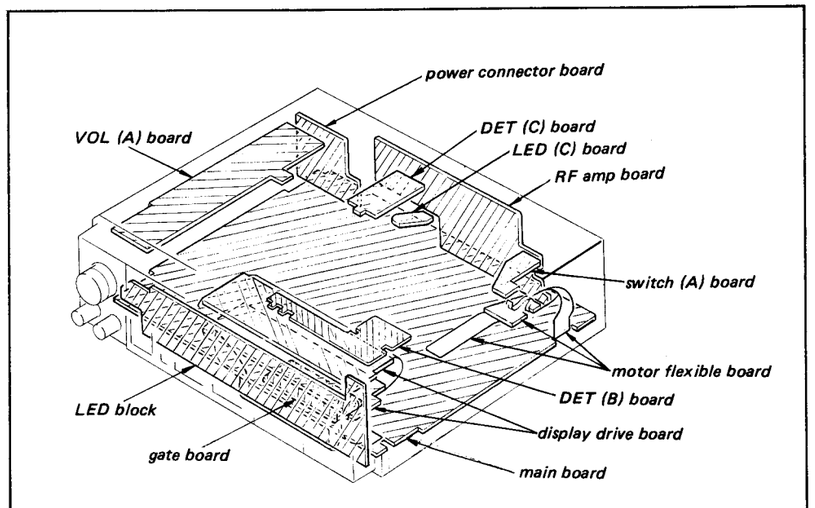
– Coarse adjustment –

Procedure:



1. Remove the mechanism and the connector from the set. (Disconnect from the main board.)
2. Short between TP (5 SW) and TP (GND) on the main board with a lead wire.
3. Connect a frequency counter to the test points (PLCK), (GND) on the main board.
4. Turn on the power switch and adjust L501 for 4.2718 MHz reading on the frequency counter.
5. Disconnect the lead wire in step 1.

[CIRCUIT BOARD LOCATION]



• Note on Schematic Diagram.

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ⇨ : signal path.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

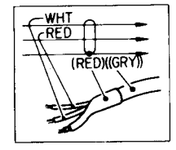
Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Components for right channel have same values as for left channel. Reference numbers are coded from 200 and 420.
- ——— : B+ bus.
- – – – : B– bus.
- Power voltage is 14.4V and fed with DC voltage regulator from ACC and BACK UP. Voltages are dc with respect to ground in CD playing mode. Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken to ground in CD playing mode by using oscilloscope. Voltage variations may be noted due to normal production tolerances.

• Note on Mounting Diagram.

Note:

- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- ⊗ : Through hole.
- —→— : signal path
- —·→ : L-CH signal path
- —··→ : R-CH signal path
- : B + pattern
- : B – pattern
- : component-side pattern.

- See page 44 for semiconductor lead layouts.

【DET(B) BOARD】

【RF AMP BOARD】

【MOTOR FLEXIBLE BOARD】

【MAIN BOARD】

【DET(C) BOARD】

【LED(C) BOARD】

【SWITCH(A) BOARD】

(DISC MOTOR)

(OPTICAL PICK-UP) BLOCK (FOP)

M901 SLED MOTOR

S901 SLED LIMIT SWITCH

M501 LOADING MOTOR

(DOOR HOLD/DOOR PLANGER)

S902 DOOR SWITCH

S903 LOADING END DET SWITCH

SIGNAL INPUT

B2501 BUZZER

D	IC , Q
653	
	IC652 IC651
654	
651	651 652
652	653
872	
871 872 873	871
874	873

D	IC , Q
514 513 512	527 523 524
511	520 519
510	522 521 530 IC301
301	525 526
501	511
302 502	510 IC506 509 IC509
505	508 IC201 506 IC101 IC302 529 528 IC501 505
504	504
303 503	503
515	532
	IC504 IC502
	517 IC202
	531
	IC505 IC503
516	IC102 IC508 534
	535
	516 533 515 301
506	518
517	513 514 512
507 508 509	
	IC507

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

IC・Q: IC802 754 756 752 IC801 IC754 804 803 802 801 808 806 807 805
D: 803 752 751 801 802

【GATE BOARD】

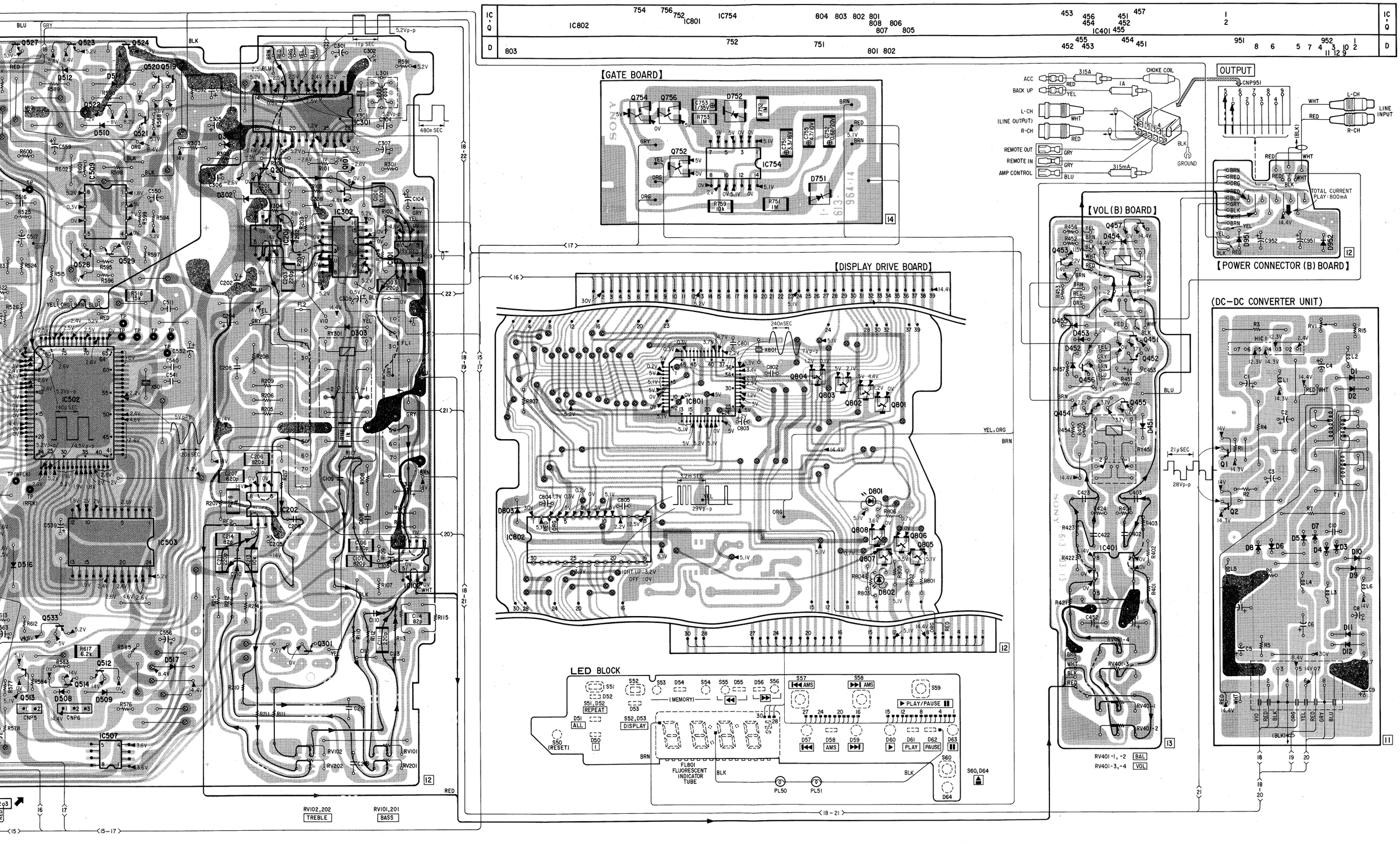
【DISPLAY DRIVE BOARD】

LED BLOCK

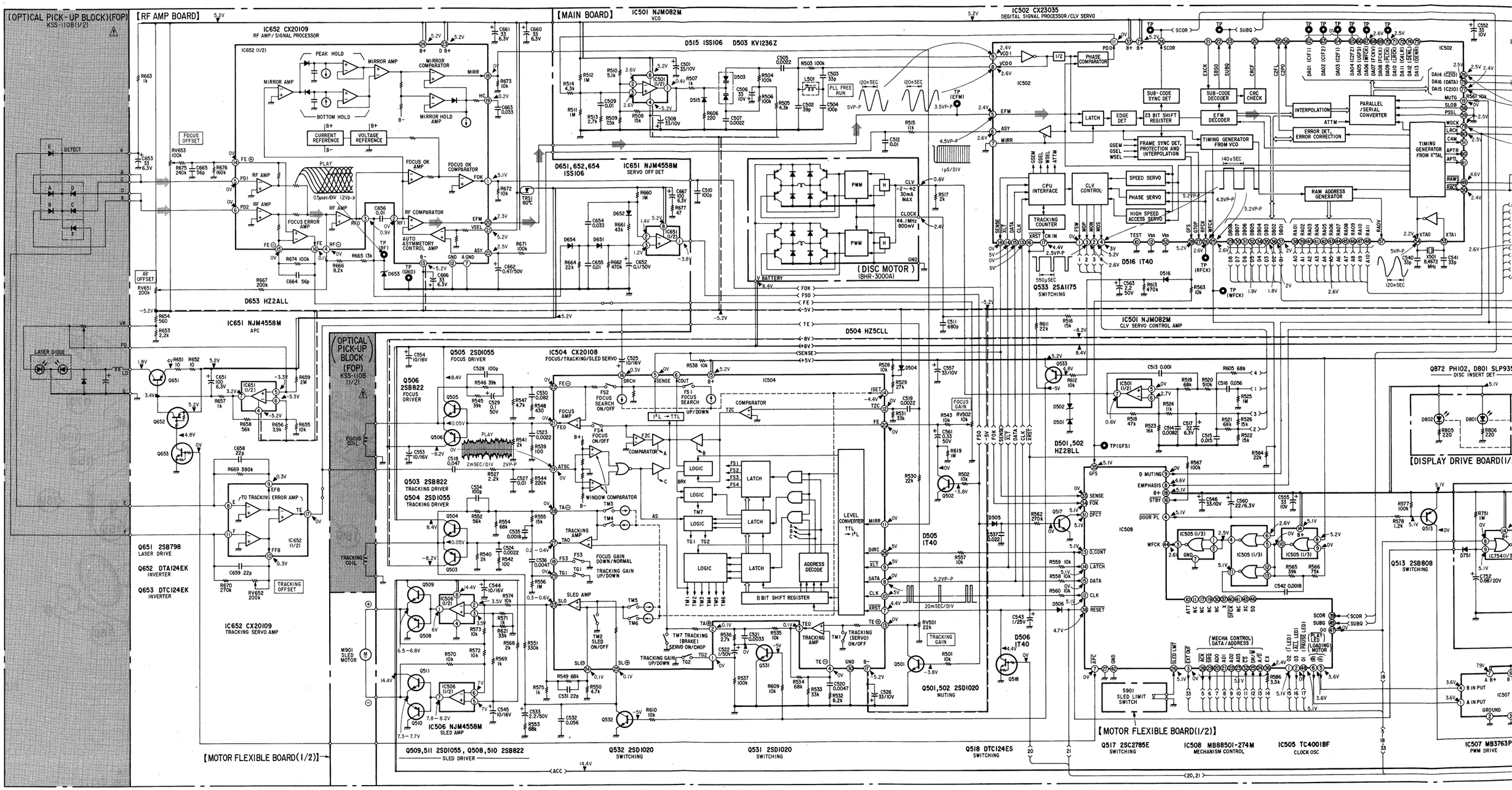
S51 S52 S53 D54 S54 S55 D55 D56 S56 S57 AMS S58 AMS S59 PLAY/PAUSE
D52 S51,D52 REPEAT (MEMORY) S52,D53 DISPLAY D53
D51 ALL
D50 S50 (RESET)
FL801 FLUORESCENT INDICATOR TUBE
D57 D58 AMS D59 D60 D61 PLAY D62 PAUSE D63 S60 D64 S60,D64

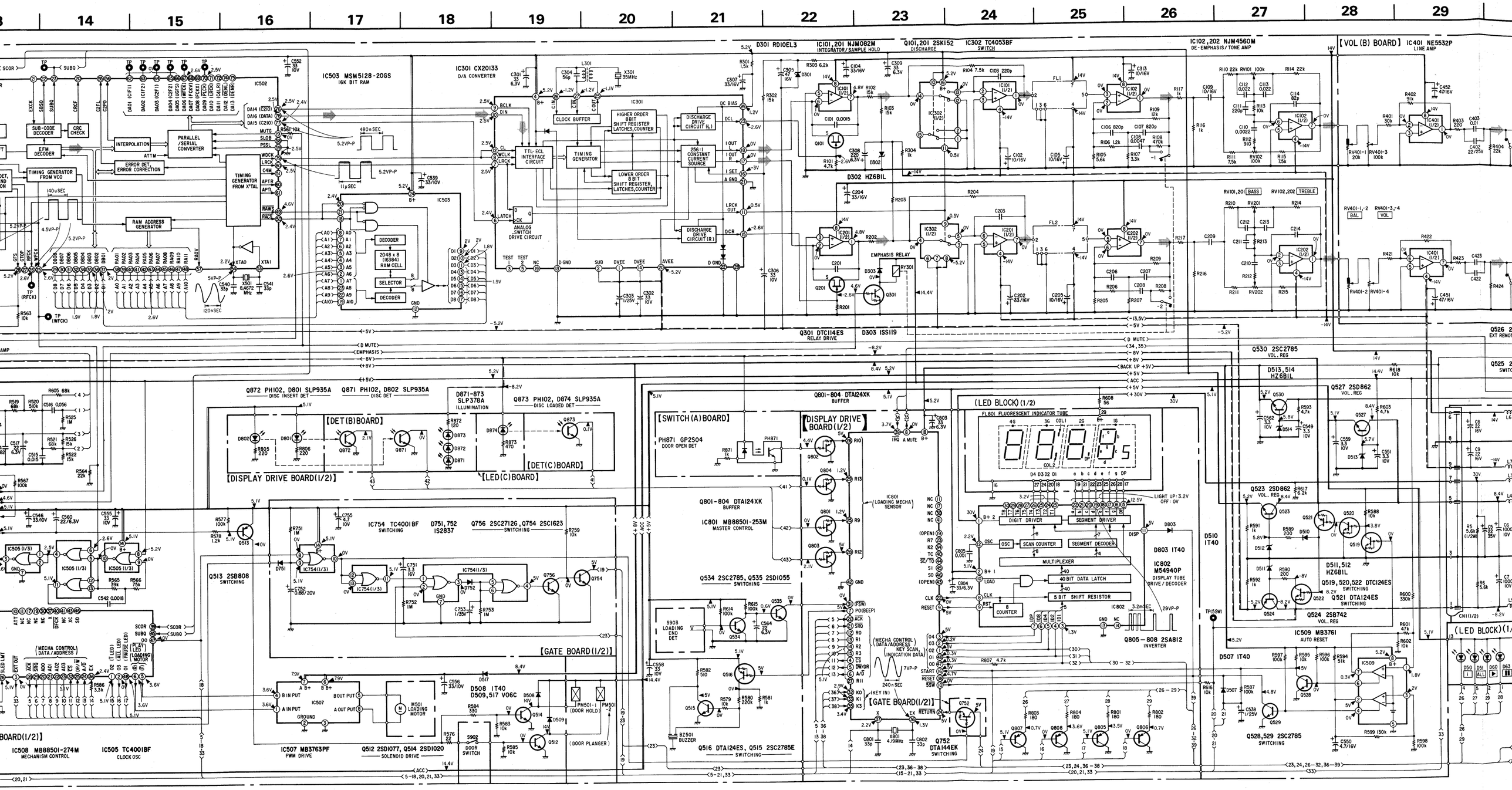
ACC
BACK UP
L-CH (LINE OUTPUT)
R-CH
REMOTE OUT
REMOTE IN
AMP CONTROL

RVI02,202 TREBLE
RVI01,201 BASS


【GATE BOARD】
【DISPLAY DRIVE BOARD】
【VOL(B) BOARD】
【POWER CONNECTOR (B) BOARD】
(DC-DC CONVERTER UNIT)
OUTPUT
CNP951
ACC
BACK UP
L-CH (LINE OUTPUT)
R-CH
REMOTE OUT
REMOTE IN
AMP CONTROL
CHOKE COIL
GROUND
L-CH
R-CH
LINE INPUT
TOTAL CURRENT PLAY: 800mA
LED BLOCK
FL801 FLUORESCENT INDICATOR TUBE
RV102,202 TREBLE
RV101,201 BASS
RV401-1, -2 BAL
RV401-3, -4 VOL
IC502
IC503
IC507
IC801
IC802
IC754
IC401
IC301
IC302
SONY

4-2. SCHEMATIC DIAGRAM




13
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24
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27
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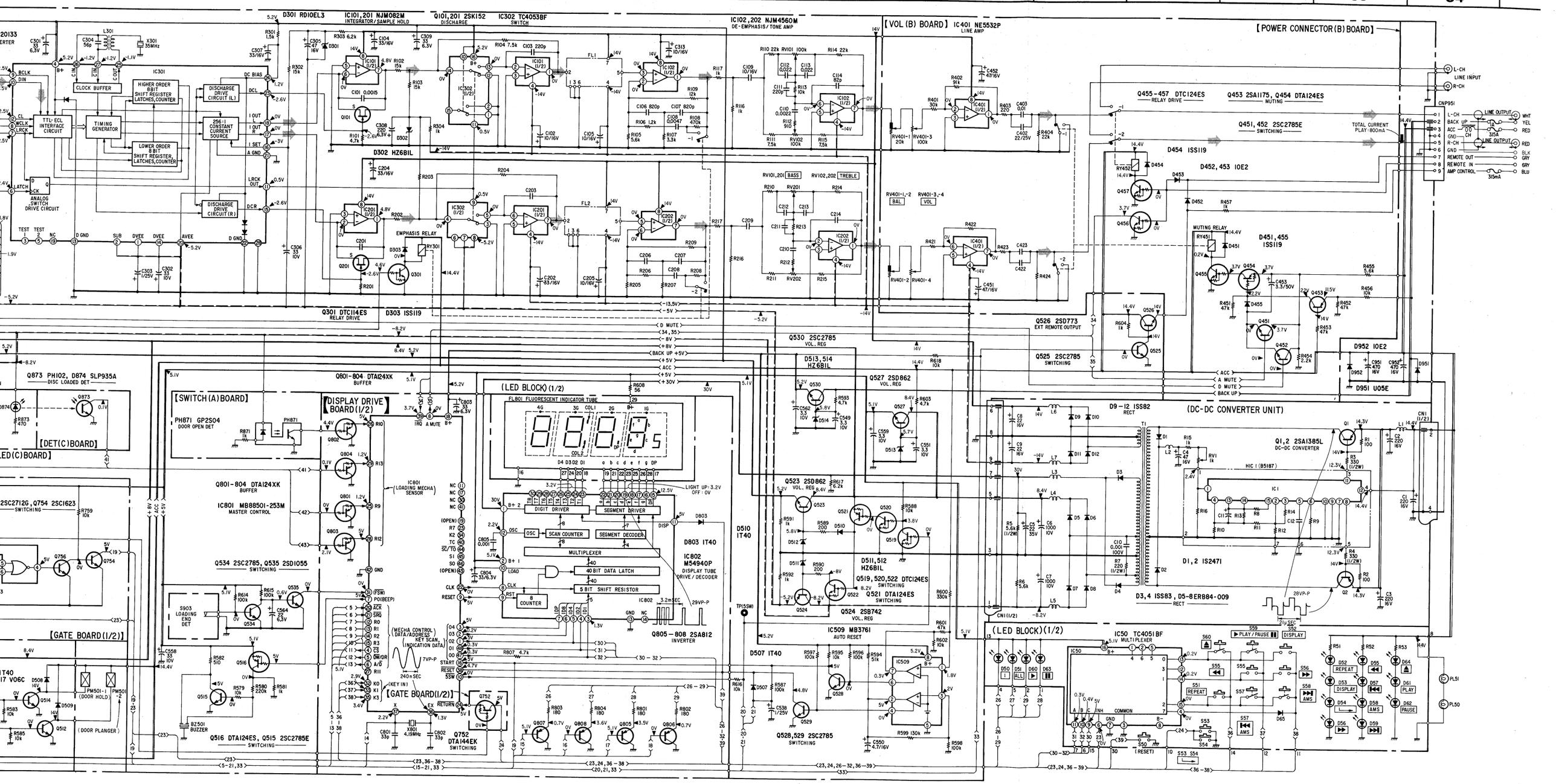
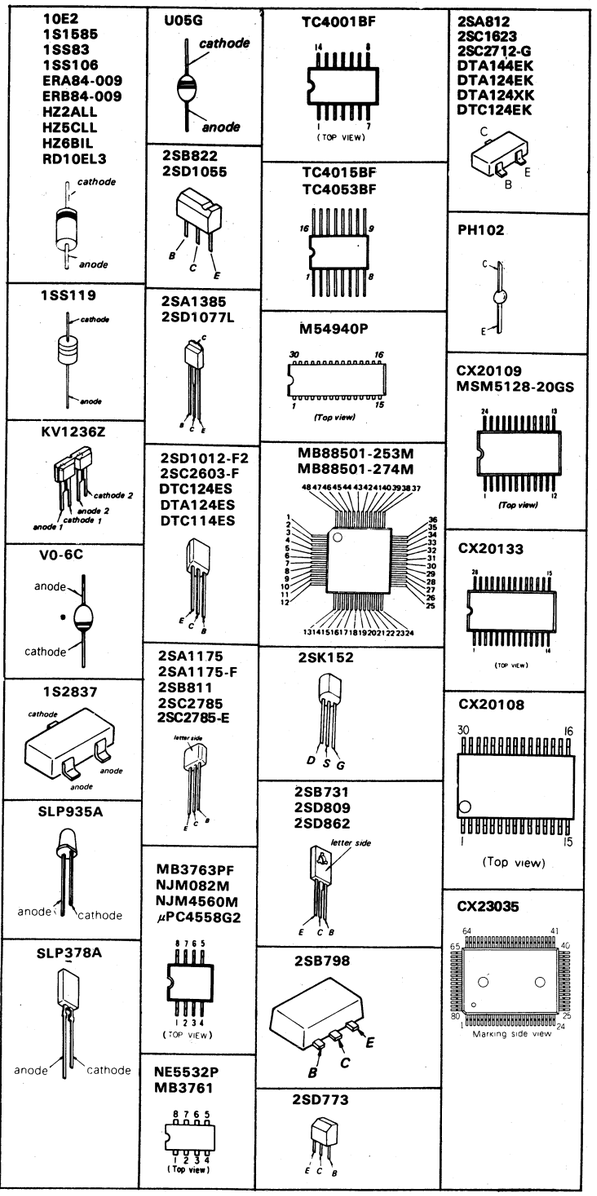
29
IC503 MSM5128-20GS
16K BIT RAM
IC301 CX20133
D/A CONVERTER
IC101, 201 NJM082M
INTEGRATOR/SAMPLE HOLD
Q101, 201 2SK152
DISCHARGE
IC302 TC4053BF
SWITCH
IC102, 202 NJM4560M
DE-EMPHASIS/TONE AMP
【VOL(B) BOARD】 IC401 NE5532P
LINE AMP
D301 RD10EL3
D302 HZ6BIL
Q301 DTC114ES
RELAY DRIVE
D303 1SS119
IC502
SUB-CODE DECODER
CRC CHECK
EFM DECODER
INTERPOLATION
ATTM
ERROR DET, ERROR CORRECTION
PARALLEL /SERIAL CONVERTER
TIMING GENERATOR FROM VCO
TIMING GENERATOR FROM X'TAL
RAM ADDRESS GENERATOR
480n SEC
140u SEC
11μ SEC
120n SEC
TTL-ECL INTERFACE CIRCUIT
CLOCK BUFFER
TIMING GENERATOR
HIGHER ORDER 8 BIT SHIFT REGISTER LATCHES, COUNTER
LOWER ORDER 8 BIT SHIFT REGISTER, LATCHES, COUNTER
DISCHARGE DRIVE CIRCUIT (L)
DISCHARGE DRIVE CIRCUIT (R)
256-1 CONSTANT CURRENT SOURCE
ANALOG SWITCH DRIVE CIRCUIT
DECODER
2048 x 8 (HS384) RAM CELL
SELECTOR
EMPHASIS RELAY
RY301
BASS
TREBLE
BAL
VOL
【SWITCH(A)BOARD】
PH871 GP2S04
DOOR OPEN DET
【DISPLAY DRIVE BOARD(1/2)】
Q801-804 DTA124XK
BUFFER
【LED BLOCK)(1/2)
FL801 FLUORESCENT INDICATOR TUBE
DIGIT DRIVER
SEGMENT DRIVER
SCAN COUNTER
SEGMENT DECODER
MULTIPLEXER
40 BIT DATA LATCH
5 BIT SHIFT RESISTOR
8 COUNTER
IC802 M54940P
DISPLAY TUBE DRIVE/DECODER
Q805-808 2SA812
INVERTER
D803 IT40
D510 IT40
Q530 2SC2785
VOL. REG
D513,514 HZ6BIL
Q527 2SD862
VOL. REG
Q523 2SD862
VOL. REG
Q524 2SB742
VOL. REG
Q521 DTA124ES
SWITCHING
Q519,520,522 DTC124ES
SWITCHING
D511,512 HZ6BIL
IC509 MB3761
AUTO RESET
Q528,529 2SC2785
SWITCHING
【DET(B)BOARD】
【DET(C)BOARD】
【LED(C)BOARD】
Q872 PH102, D801 SLP935A
DISC INSERT DET
Q871 PH102, D802 SLP935A
DISC DET
Q873 PH102, D874 SLP935A
DISC LOADED DET
D871-873 SLP378A
ILLUMINATION
【GATE BOARD(1/2)】
IC754 TC4001BF
SWITCHING
D751,752 IS2837
Q756 2SC2712G, Q754 2SC1623
SWITCHING
Q513 2SB808
SWITCHING
IC507 MB3763PF
PWM DRIVE
Q512 2SD1077, Q514 2SD1020
SOLENOID DRIVE
Q534 2SC2785, Q535 2SD1055
SWITCHING
Q516 DTA124ES, Q515 2SC2785
SWITCHING
Q752 DTA144EK
SWITCHING
IC801 MB88501-253M
MASTER CONTROL
IC508 MB88501-274M
MECHANISM CONTROL
IC505 TC4001BF
CLOCK OSC
S903 LOADING END DET
BZ501 BUZZER
M501 LOADING MOTOR
S902 DOOR SWITCH
(DOOR HOLD)
(DOOR PLANGER)
(MECHA CONTROL) DATA/ADDRESS
(MECHA CONTROL) DATA/ADDRESS KEY SCAN, INDICATION DATA
(KEY IN)
D MUTE
EMPHASIS
ACC
BACK UP +5V
LIGHT UP: 3.2V
OFF: 0V
X501 8.4672 MHz
X301 35MHz
X801 4.19MHz
— 41 —
— 42 —

19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34



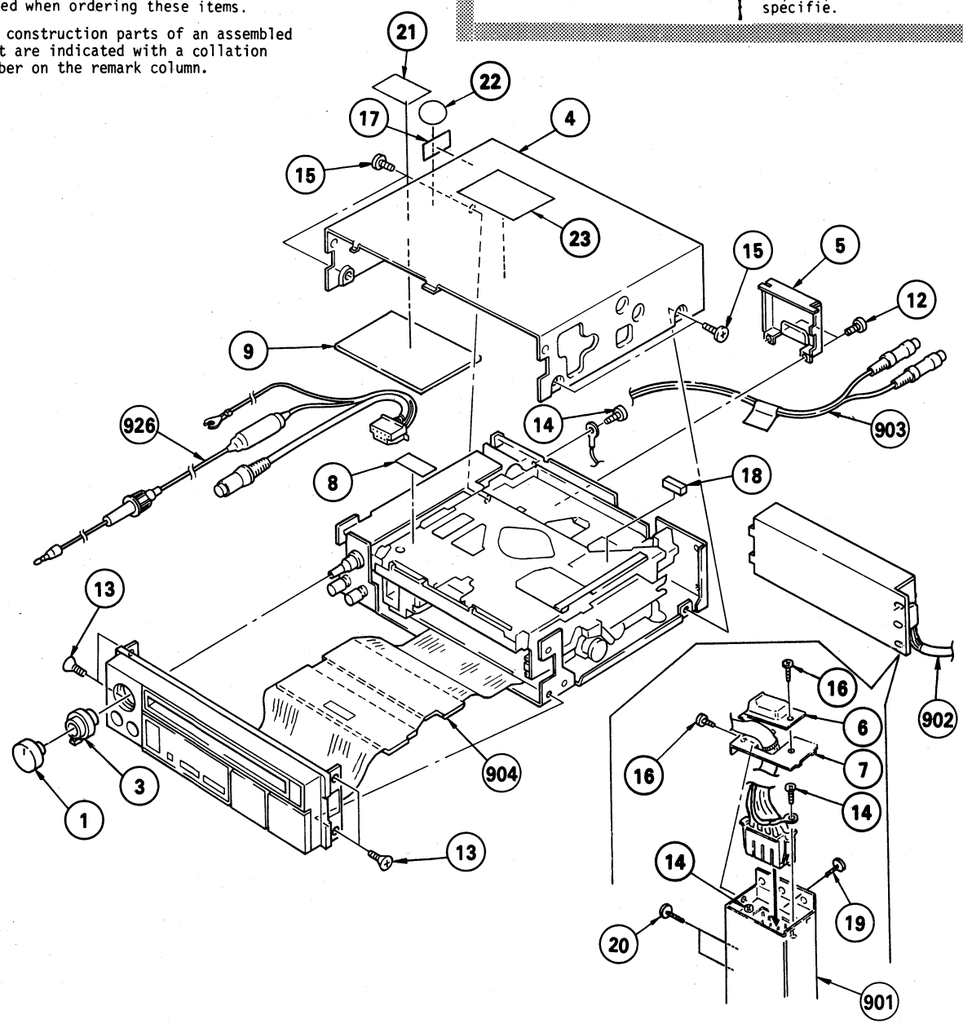
Semiconductor lead layouts



SECTION 5
EXPLODED VIEWS AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number on the remark column.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



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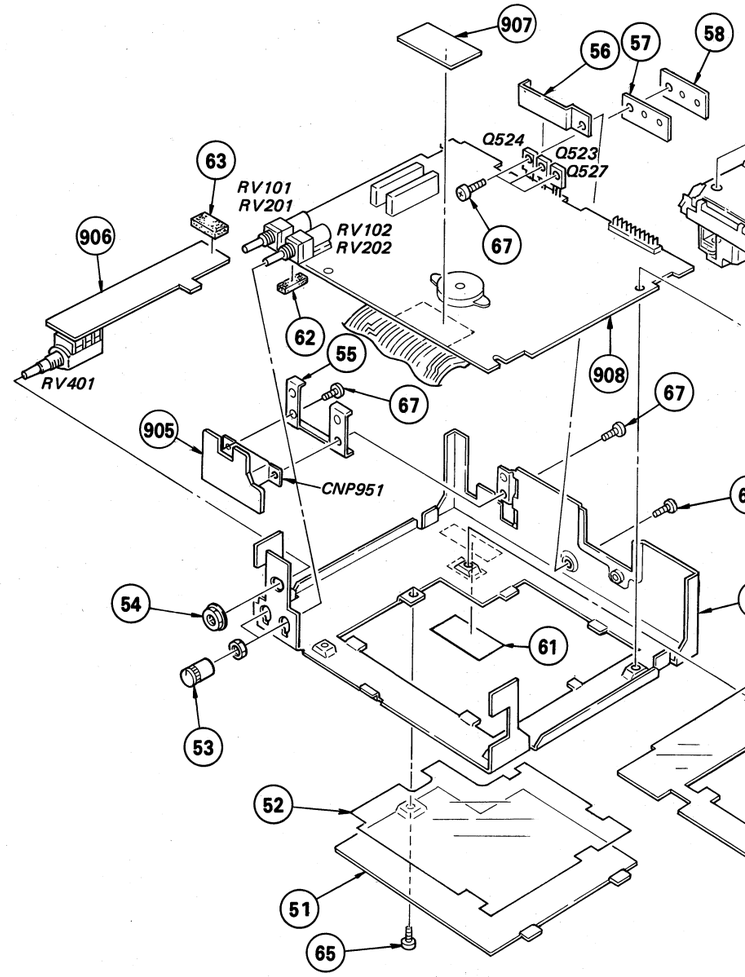
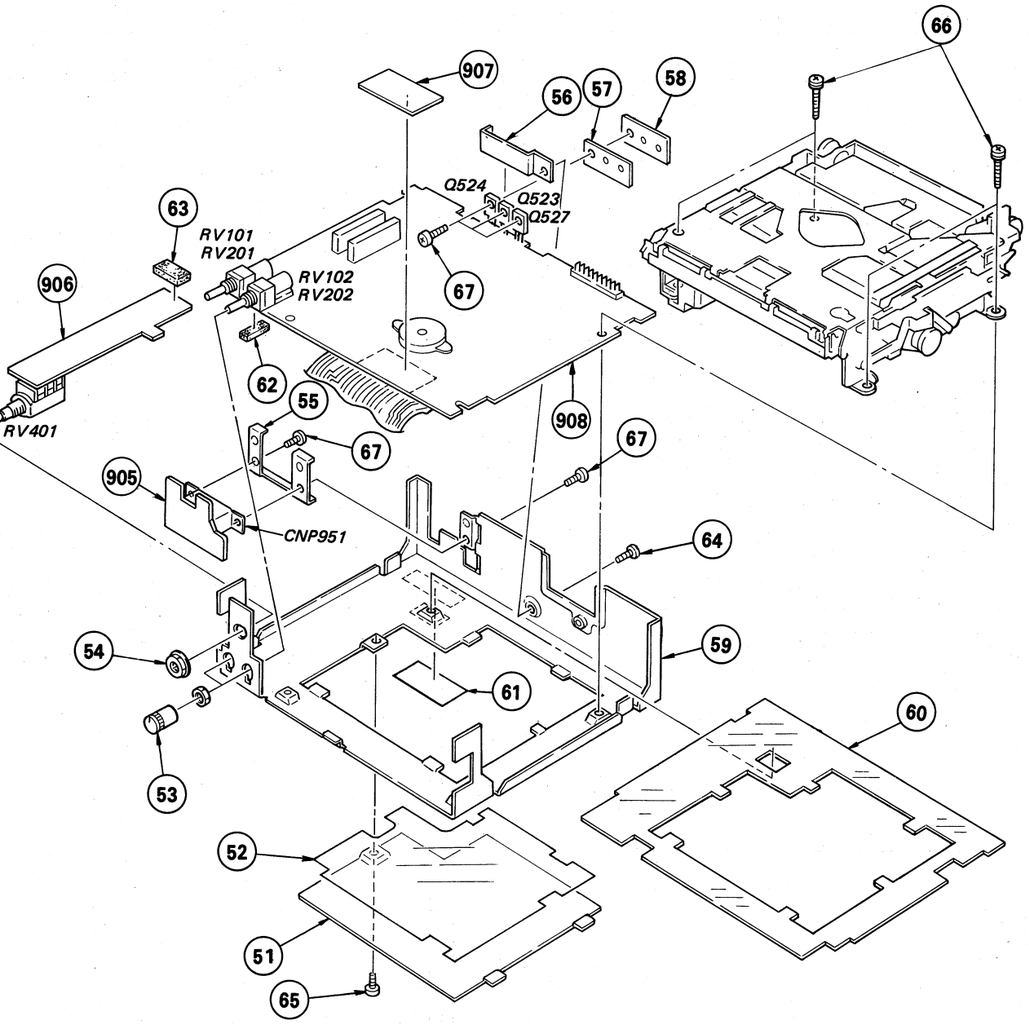


No.	Part No.	Description	REMARKS
1	X-3320-520-1	KNOB ASSY, VOLUME	
3	3-320-504-01	KNOB (B), CONTROL	
4	3-323-203-21	CASE (UPPER)	
5	*3-320-592-01	COVER, CORD	
6	*3-320-587-01	STOPPER (C), CORD	
7	*3-320-586-01	BRACKET	
8	4-908-402-01	(US, Canadian)... LABEL, INTERLOCK, DHHS	
9	3-323-255-01	LABEL, SERVICE	
12	7-621-770-67	SCREW +P 2.6X6	
13	7-621-559-20	SCREW +K 2.6X4	
14	7-682-146-01	SCREW +P 3X5	
15	7-682-545-09	SCREW +B 3X4	
16	7-685-790-04	SCREW +BVTT 2.6X4 (S)	
17	4-908-401-01	(US, Canadian)... LABEL, HOUSING, DHHS	
18	9-911-840-XX	SPACER (A)	
19	7-621-559-30	SCREW +K2.6X5	
20	7-628-254-05	SCREW +PS2.6X5	
21	3-323-289-01	(AEP).....LABEL, SPEAKER	
22	*3-703-476-11	(AEP).....LABEL (CPS), F MARK	
23	*4-885-838-01	(AEP).....LABEL, CLASS 1	
901	1-464-398-11	CONVERTER UNIT, DC-DC	
902	1-557-640-11	CORD (WITH CONNECTOR)	
903	1-555-820-00	CORD (WITH JACK)	
904	*A-3219-056-A	PC BOARD ASSY, DISPLAY DRIVE	
926	1-557-626-12	CORD (WITH CONNECTOR)	

No.	Part No.	Description	REMARKS
51	*3-320-593-01	COVER	
52	*3-323-256-01	SHEET (B), INSULATING	
53	X-3320-519-1	KNOB ASSY, TONE	
54	3-575-039-00	NUT, CONTROL	
55	*3-323-257-01	BRACKET (B), CAPACITOR	
56	*3-320-585-01	RETAINER, TRANSISTOR	
57	*3-323-238-01	SHEET, RADIATION	
58	*3-320-583-01	HEAT SINK	
59	*3-323-204-01	CASE (LOWER)	
60	*3-323-239-01	SHEET (A), INSULATING	
61	*3-320-501-01	LABEL, MODEL NUMBER	
62	9-911-845-XX		
63	9-911-840-XX		
64	7-621-773-86		
65	7-627-553-18		
66	7-628-254-35		
67	7-682-146-01		
905	*1-613-704-11		
906	*1-613-703-11		
907	*1-613-964-11		
908	*A-3260-252-A		



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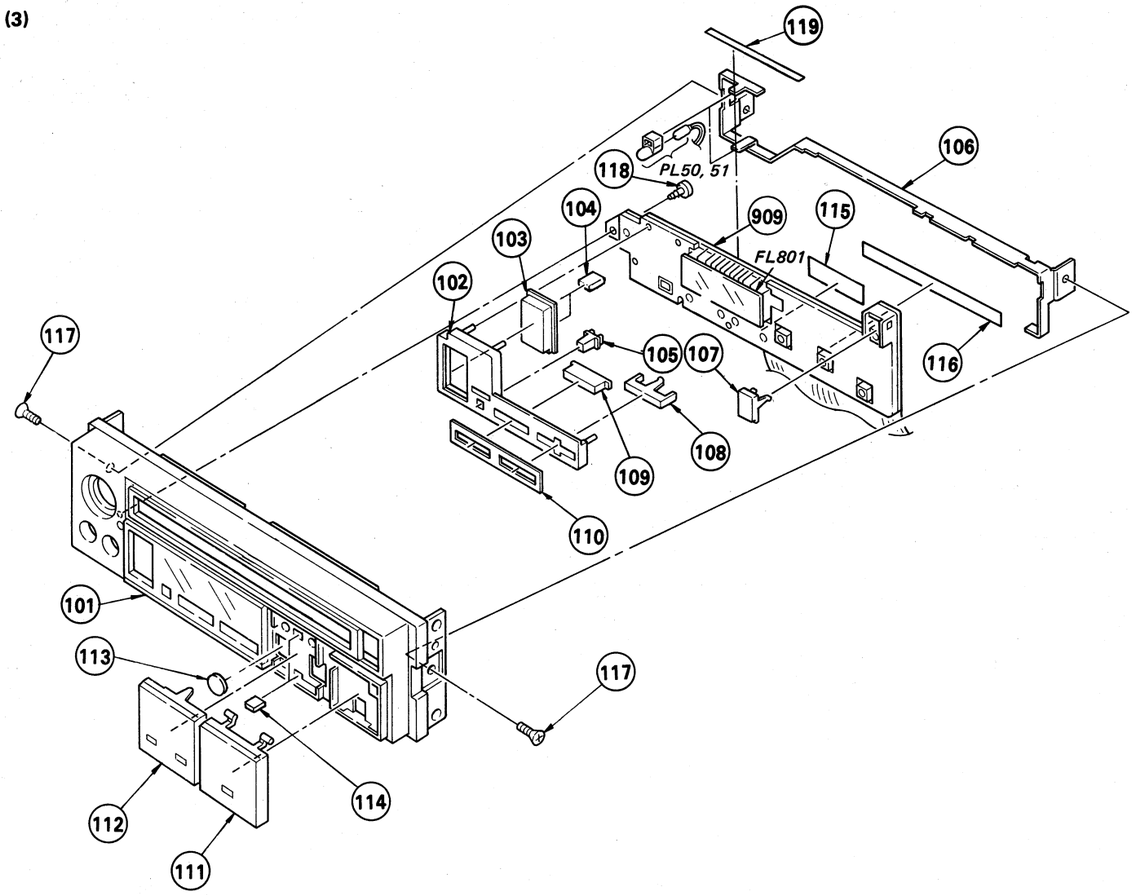

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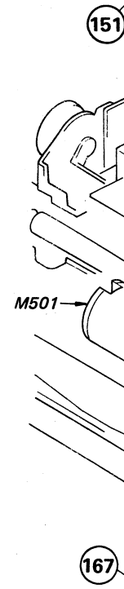


Part No.	Description	REMARKS
*3-320-593-01	COVER	
*3-323-256-01	SHEET (B), INSULATING	
X-3320-519-1	KNOB ASSY, TONE	
3-575-039-00	NUT, CONTROL	
*3-323-257-01	BRACKET (B), CAPACITOR	
*3-320-585-01	RETAINER, TRANSISTOR	
*3-323-238-01	SHEET, RADIATION	
*3-320-583-01	HEAT SINK	
*3-323-204-01	CASE (LOWER)	
*3-323-239-01	SHEET (A), INSULATING	
*3-320-501-01	LABEL, MODEL NUMBER	

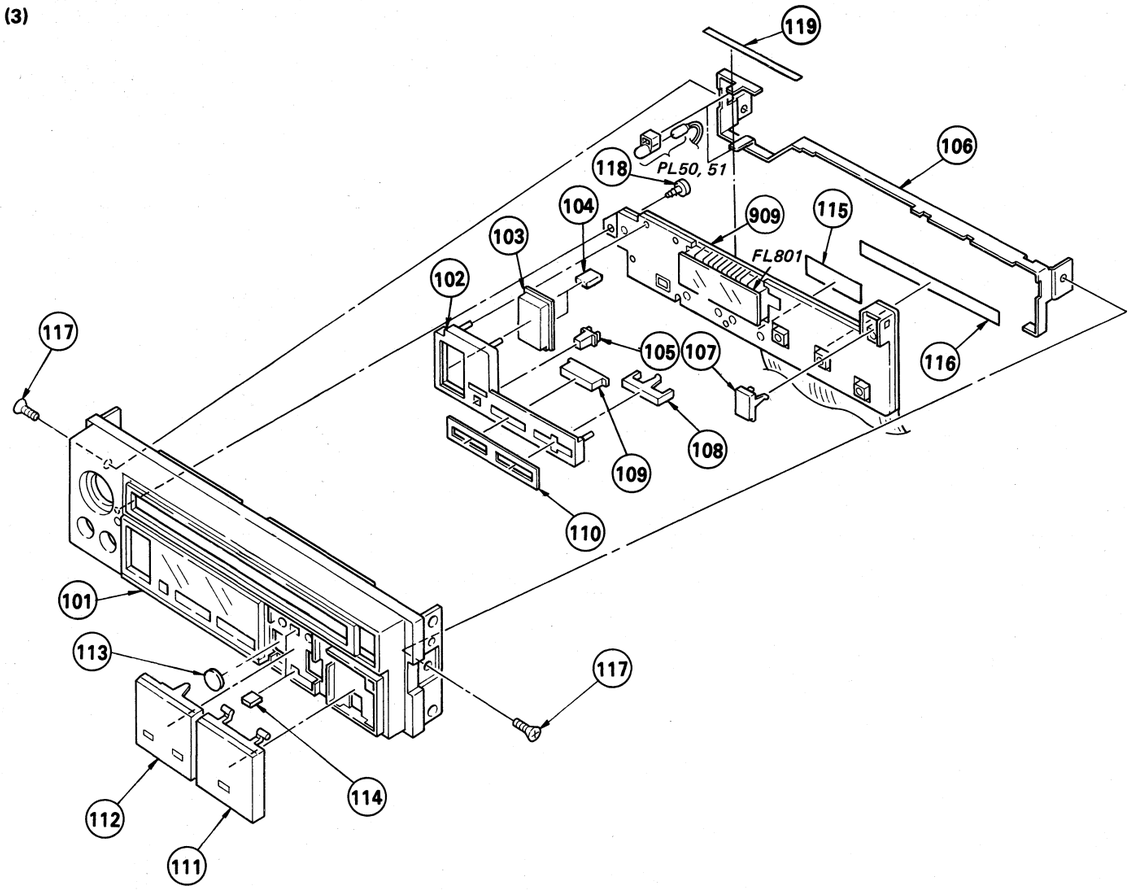
No.	Part No.	Description	REMARKS
62	9-911-845-XX	SPACER (B)	
63	9-911-840-XX	SPACER (A)	
64	7-621-773-86	SCREW +P 2.6X4	
65	7-627-553-18	SCREW, PRECISION +P 2X2	
66	7-628-254-35	SCREW +PS 2.6X10	
67	7-682-146-01	SCREW +P 3X5	
905	*1-613-704-11	PC BOARD, POWER CONNECTOR	
906	*1-613-703-11	PC BOARD, VOL (B)	
907	*1-613-964-11	PC BOARD, GATE	
908	*A-3260-252-A	PC BOARD ASSY, MAIN	

No.	Part No.	Description	REMARKS
101	A-3240-984-A	NOSE PIECE ASSY	
102	3-320-599-01	CHASSIS, KNOB	
103	3-320-588-01	BUTTON, REPEAT	
104	9-911-837-XX	SPACER	
105	3-320-591-01	BUTTON (C), CONTROL	
106	*3-323-201-02	RETAINER, PC BOARD, CONTROL	
107	3-320-502-01	BUTTON, EJECT	
108	3-320-590-01	BUTTON (A), CONTROL	
109	3-320-589-01	BUTTON (B), CONTROL	
110	*3-320-584-01	CLOTH, BLIND, CONTROL BUTTON	

No.	Part No.	Description	REMARKS
111	3-320-507-01	BUTTON, PLAY/PAUSE	
112	3-320-506-01	BUTTON, AMS	
113	3-831-441-11	SPACER (C)	
115	9-911-863-XX	SHEET, INSULATING	
116	3-645-258-01	CUSHION	
117	7-621-559-20	SCREW +K 2.6X4	
118	7-685-131-11	SCREW +P 2.6X4 TYPE2 NON-SLIT	
119	3-831-441-XX	CUSHION, PANEL	
909	1-806-856-11	DIODE (LED BLOCK)	

No.	Part No.	De
151	*3-320-533-01	HO
152	X-3320-509-1	LE
153	3-440-152-03	SP
154	3-570-615-00	PO
155	3-578-265-11	WA
156	3-323-246-01	SP
157	3-323-243-01	SP
158	X-3320-501-1	LE
159	3-323-247-01	SP
160	3-320-521-01	SP
161	3-320-552-01	GE

(3)



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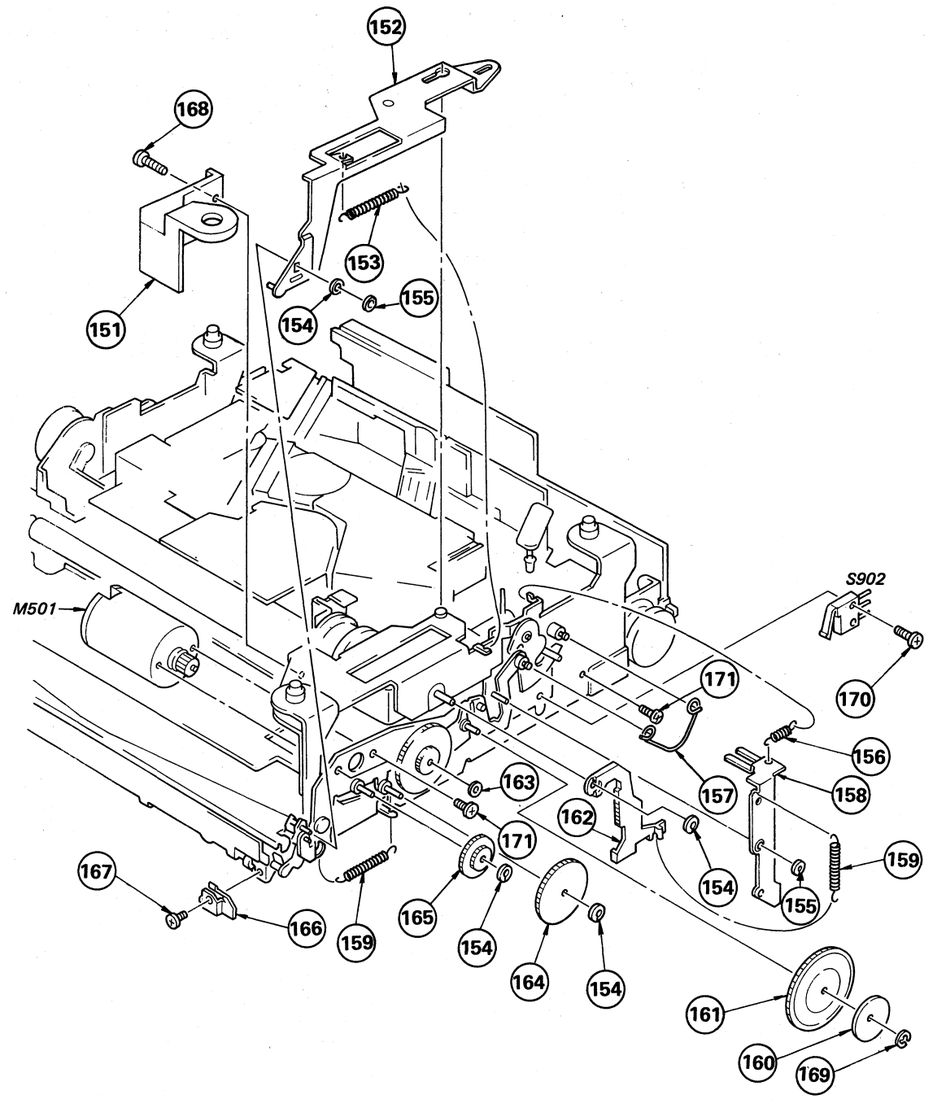


REMARKS

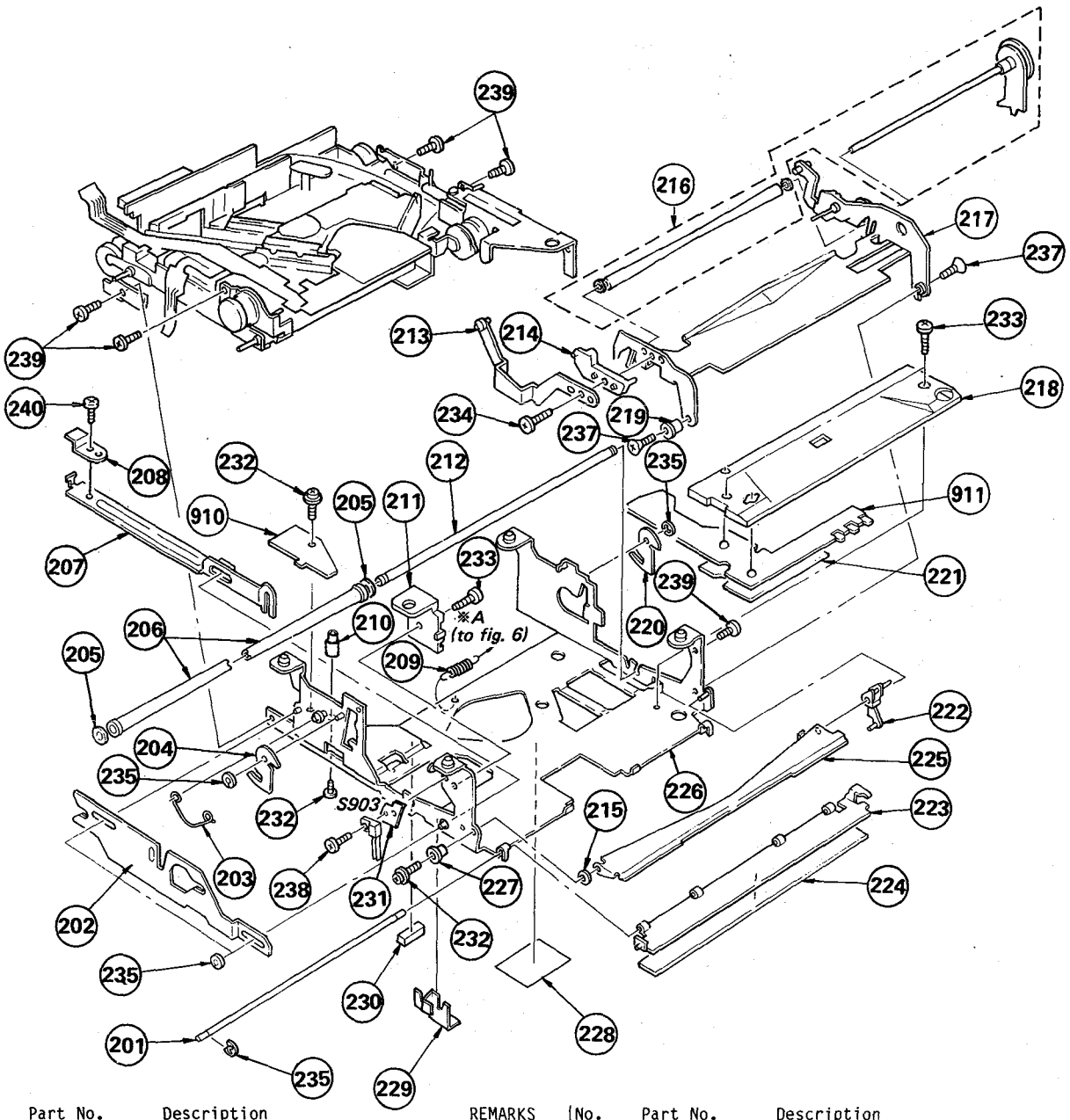
No.	Part No.	Description	REMARKS
101	A-3240-984-A	NOSE PIECE ASSY	
102	3-320-599-01	CHASSIS, KNOB	
103	3-320-588-01	BUTTON, REPEAT	
104	9-911-837-XX	SPACER	
105	3-320-591-01	BUTTON (C), CONTROL	
106	*3-323-201-02	RETAINER, PC BOARD, CONTROL	
107	3-320-502-01	BUTTON, EJECT	
108	3-320-590-01	BUTTON (A), CONTROL	
109	3-320-589-01	BUTTON (B), CONTROL	
110	*3-320-584-01	CLOTH, BLIND, CONTROL BUTTON	

No.	Part No.	Description	REMARKS
111	3-320-507-01	BUTTON, PLAY/PAUSE	
112	3-320-506-01	BUTTON, AMS	
113	3-831-441-11	SPACER (C)	
115	9-911-863-XX	SHEET, INSULATING	
116	3-645-258-01	CUSHION	
117	7-621-559-20	SCREW +K 2.6X4	
118	7-685-131-11	SCREW +P 2.6X4 TYPE2 NON-SLIT	
119	3-831-441-XX	CUSHION, PANEL	
909	1-806-856-11	DIODE (LED BLOCK)	

No.	Part No.	Description	REMARKS
151	*3-320-533-01	HOLDER (A)	
152	X-3320-509-1	LEVER ASSY, JOINT, SOLENOID	
153	3-440-152-03	SPRING, TENSION	
154	3-570-615-00	POLY-WASHER (DIA.1.2)	
155	3-578-265-11	WASHER, STOPPER	
156	3-323-246-01	SPRING, TENSION	
157	3-323-243-01	SPRING	
158	X-3320-501-1	LEVER ASSY, RACK	
159	3-323-247-01	SPRING, TENSION	
160	3-320-521-01	SPRING	
161	3-320-552-01	GEAR, DOWN	

No.	Part No.	Description	REMARKS
162	3-320-574-01	RACK	
163	3-701-438-01	WASHER	
164	3-320-550-01	GEAR (B)	
165	3-320-549-01	GEAR (A)	
166	3-320-542-01	SPRING	
167	3-703-816-01	SCREW (M1.4)	
168	7-621-255-25	SCREW +P 2X4	
169	7-624-101-01	RING, RETAINING E-1.2	
170	7-627-552-48	SCREW, PRECISION +P 1.7X4	
171	7-627-553-18	SCREW, PRECISION +P 2X2	

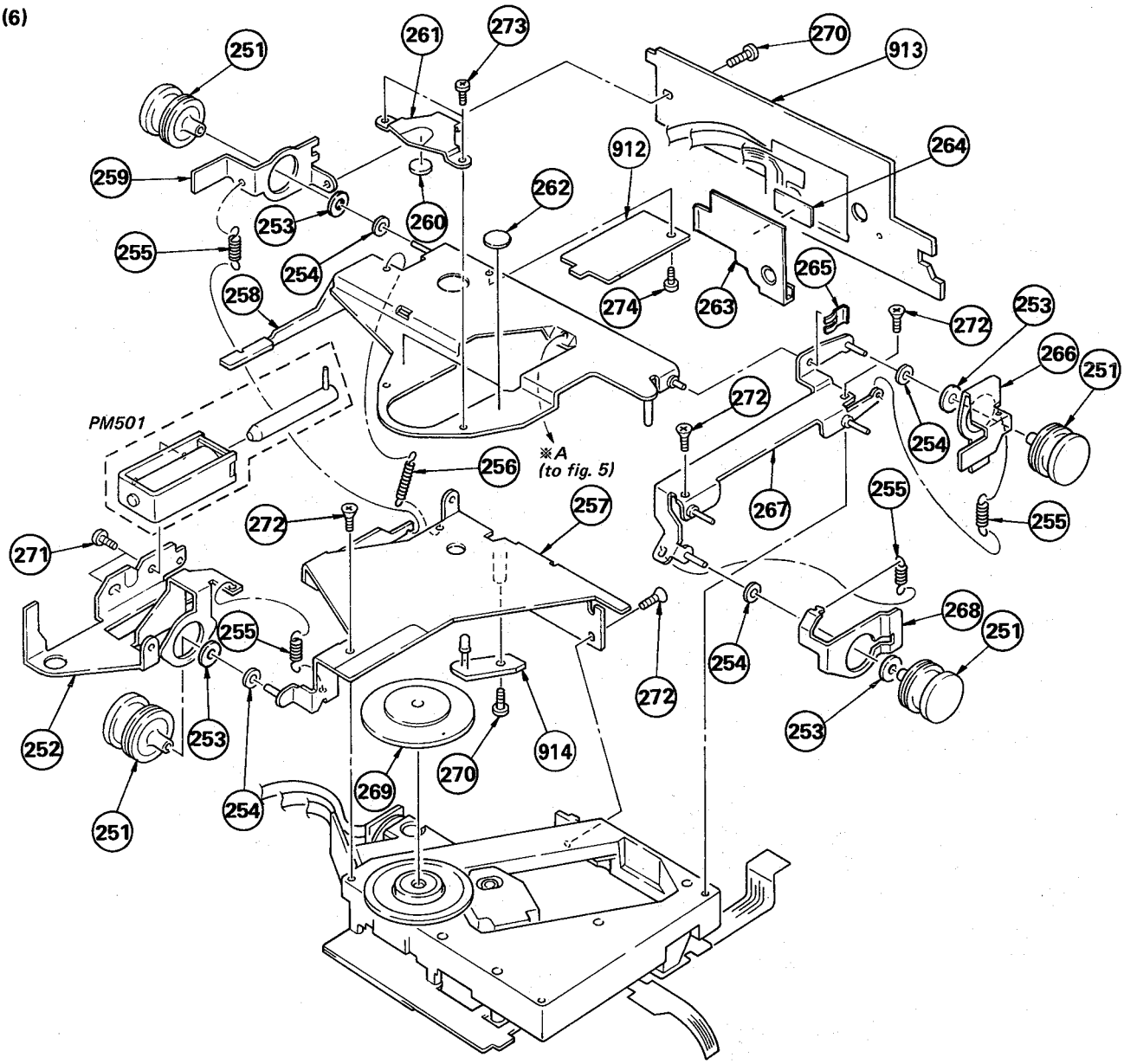
(5)



No.	Part No.	Description	REMARKS
201	3-320-577-01	SHAFT, DOOR HINGE	
202	*3-320-569-01	HOOK (B), LOCK	
203	3-323-243-01	SPRING	
204	X-3320-506-1	HOOK (A) ASSY, LOCK	
205	3-701-439-01	WASHER	
206	3-320-516-01	ROLLER (UPPER)	
207	X-3320-521-1	LEVER ASSY, SWITCH (A)	
208	3-323-228-01	REFLECTOR, SW (A)	
209	3-642-490-00	SPRING, TENSION	
210	3-320-544-01	BOSS, SWITCH (A)	
211	*3-320-534-01	HOLDER (B)	
212	3-320-522-01	SHAFT, ROLLER (UPPER)	
213	*X-3320-507-1	ARM ASSY, SUPPORT	
214	3-320-536-01	HOLDER, CONTACT SPRING	
215	3-701-438-01	WASHER	
216	A-3239-289-A	ROLLER (LOWER) ASSY	
217	X-3320-513-2	ARM ASSY, DRIVING ROLLER	
218	3-320-567-01	GUIDE, DISK	
219	3-323-229-01	SHAFT (RIGHT), ROLLER ARM	
220	3-323-245-01	HOOK (C), LOCK	
221	*3-323-230-01	SHEET, INSULATING	

No.	Part No.	Description	REMARKS
222	X-3320-504-1	ARM ASSY, DOOR	
223	X-3320-508-1	HINGE ASSY, DOOR	
224	3-320-596-01	PLATE, ORNAMENTAL, DOOR	
225	3-320-575-01	RETAINER, DOOR	
226	X-3320-514-1	FRAME ASSY, MD	
227	3-320-511-01	RETAINER (RIGHT), DOOR	
229	*3-323-267-01	PROTECTOR	
230	9-911-840-XX	SPACER (A)	
231	*3-323-244-01	SHEET (LEAF SW), INSULATING	
232	3-703-502-31	SCREW	
233	7-621-255-25	SCREW +P 2X4	
234	7-621-772-30	SCREW +B 2X6	
235	7-624-101-01	RING, RETAINING E-1.2	
236	7-624-104-04	STOP RING 2.0, TYPE -E	
237	7-627-452-27	+K 2X4	
238	7-627-552-48	SCREW, PRECISION +P 1.7X4	
239	7-627-553-18	SCREW, PRECISION +P 2X2	
240	7-627-850-17	SCREW, PRECISION +P 1.4X2.5	
910	*1-613-707-11	PC BOARD, SWITCH (A)	
911	*1-614-164-11	PC BOARD, DET (B)	

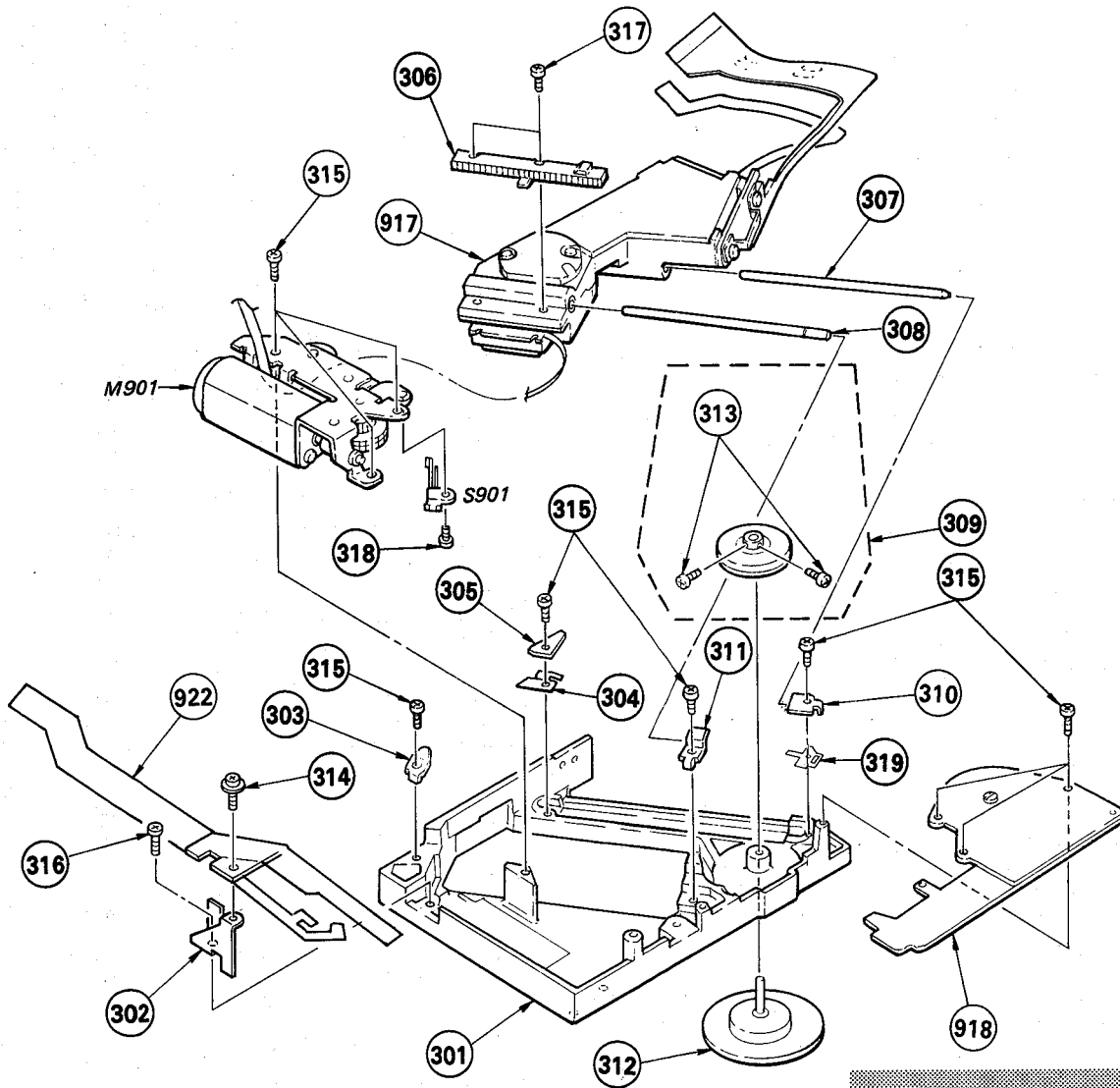
(6)



No.	Part No.	Description	REMARKS
251	3-323-234-01	DAMPER (2), HYPER	
252	*X-3320-512-1	BRACKET (B) ASSY, INSULATOR	
253	3-323-263-01	WASHER, TEFLON	
254	3-323-240-01	WASHER, RUBBER	
255	3-662-752-11	SPRING, TENSION	
256	3-527-189-00	SPRING, TENSION	
257	*X-3320-510-1	CHASSIS (A) ASSY, MD FITTING	
258	*X-3320-502-1	ARM ASSY, CHUCKING	
259	*3-320-527-01	BRACKET (D), INSULATOR	
260	3-320-539-01	SHEET, THRUST, RETAINER	
261	3-320-514-01	RETAINER, THRUST	
262	3-302-412-01	CUSHION, RUBBER	
263	*3-323-261-01	RETAINER, FLEXIBLE	
264	4-854-027-00	INSULATOR	

No.	Part No.	Description	REMARKS
265	7-624-102-04	STOP RING 1.5, TYPE -E	
266	*3-320-526-01	BRACKET (C), INSULATOR	
267	*X-3320-511-1	CHASSIS (B) ASSY, MD FITTING	
268	*3-320-525-01	BRACKET (A), INSULATOR	
269	A-3239-290-A	PLATE SUB ASSY, CHUCK	
270	7-621-255-25	SCREW +P 2X4	
271	7-621-775-08	SCREW +P 2.6X3	
272	7-627-452-18	SCREW, PRECISION +K 2X3	
273	7-627-552-18	SCREW, PRECISION +P 1.7X1.6	
274	7-627-553-18	SCREW, PRECISION +P 2X2	
275	3-703-929-01	SHEET (SOLENOID), INSULATING	
912	*1-613-709-11	PC BOARD, DET (C)	
913	*A-3279-419-A	PC BOARD ASSY, RF AMPLIFIER	
914	*1-613-710-11	PC BOARD, LED (C)	

(7)



The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	REMARKS
301	*X-3320-103-3	CHASSIS ASSY	
302	*3-323-227-01	BRACKET, FPCB	
303	3-320-103-01	RETAINER (B)	
304	3-320-130-01	SPRING (A), LEAF	
305	3-320-104-01	RETAINER (C)	
306	3-320-121-01	RACK	
307	3-320-107-01	SHAFT (B)	
308	3-320-106-01	SHAFT (A)	
309	X-2622-803-1	ROTOR ASSY	313
310	3-320-105-01	RETAINER (D)	
311	3-320-102-01	RETAINER (A)	
312	X-3320-101-1	TURNTABLE ASSY	
313	2-622-805-01	SCREW	
314	3-703-502-31	SCREW	
315	3-703-816-11	SCREW (M1.4X4)	
317	7-627-552-77	SCREW, PRECISION +P 1.7X6	
318	7-627-553-37	SCREW, PRECISION +P 2X3	
319	3-320-131-01	SPRING (B), LEAF	
917	⚠X-3320-529-1	DEVICE, OPTICAL (KSS-110B)(RP)	
918	X-2622-801-1	PC BOARD ASSY, STATOR	
922	1-613-711-11	PC BOARD, MOTOR FLEXIBLE	

NOTE:
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	1-464-398-11	CONVERTER UNIT, DC-DC
902	1-557-640-11	CORD (WITH CONNECTOR)
903	1-555-820-00	CORD (WITH JACK)
904	*A-3219-056-A	PC BOARD ASSY, DISPLAY DRIVE
905	*1-613-704-11	PC BOARD, POWER CONNECTOR
906	*1-613-703-11	PC BOARD, VOL (B)
907	*1-613-964-11	PC BOARD, GATE
908	*A-3260-252-A	PC BOARD ASSY, MAIN
909	1-806-856-11	DIODE (LED BLOCK)
910	*1-613-707-11	PC BOARD, SWITCH (A)
911	*1-614-164-11	PC BOARD, DET (B)
912	*1-613-709-11	PC BOARD, DET (C)
913	*A-3279-419-A	PC BOARD ASSY, RF AMPLIFIER
914	*1-613-710-11	PC BOARD, LED (C)
917	⚠X-3320-529-1	DEVICE, OPTICAL (KSS-110B)(RP)
918	X-2622-801-1	PC BOARD ASSY, STATOR (BHR-3000A)
922	1-613-711-11	PC BOARD, MOTOR FLEXIBLE
926	1-557-626-12	CORD (WITH CONNECTOR)
927	1-564-840-12	CONNECTOR
BZ501	1-529-014-00	BUZZER, PIEZO ELECTRIC

C1	1-123-321-00	ELECT	220MF	20%	16V
C2	1-123-321-00	ELECT	220MF	20%	16V
C3	1-123-321-00	ELECT	220MF	20%	16V
C4	1-123-332-00	ELECT	47MF	20%	16V
C5	1-123-357-00	ELECT	47MF	20%	16V
C6	1-124-559-51	ELECT	1000MF	20%	10V
C7	1-124-559-51	ELECT	1000MF	20%	10V
C8	1-127-499-00	ELECT OS	22MF		16V
C9	1-127-499-00	ELECT OS	22MF		16V
C10	1-108-365-00	FILM	1000PF		100V
C101	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V
C102	1-123-617-00	ELECT	10MF	20%	16V
C103	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C104	1-123-820-00	ELECT	33MF	20%	16V
C105	1-123-617-00	ELECT	10MF	20%	16V
C106	1-163-203-00	CERAMIC CHIP	820PF	5%	50V
C107	1-163-203-00	CERAMIC CHIP	820PF	5%	50V
C108	1-130-479-00	MYLAR	0.0047MF	5%	50V
C109	1-124-532-11	ELECT	10MF	20%	16V
C110	1-130-475-00	MYLAR	0.0022MF	5%	50V
C111	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C112	1-130-487-00	MYLAR	0.022MF	5%	50V
C113	1-130-487-00	MYLAR	0.022MF	5%	50V
C114	1-163-309-00	CERAMIC CHIP	82PF	5%	50V
C202	1-131-374-00	TANTALUM	33MF	20%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C301	1-131-386-00	TANTALUM	33MF	20%	6.3V
C302	1-123-645-00	ELECT	33MF	20%	10V
C303	1-131-408-00	TANTALUM	1MF	20%	25V
C304	1-102-523-00	CERAMIC	56PF	5%	50V
C305	1-123-821-00	ELECT	47MF	20%	16V
C306	1-123-645-00	ELECT	33MF	20%	10V
C307	1-123-820-00	ELECT	33MF	20%	16V
C308	1-123-308-00	ELECT	220MF	20%	6.3V
C309	1-131-386-00	TANTALUM	33MF	20%	6.3V
C313	1-123-617-00	ELECT	10MF	20%	16V
C402	1-124-282-00	ELECT	22MF	20%	25V
C403	1-136-153-00	FILM	0.01MF	5%	50V
C451	1-123-821-00	ELECT	47MF	20%	16V
C452	1-123-821-00	ELECT	47MF	20%	16V
C453	1-123-613-00	ELECT	3.3MF	20%	50V
C501	1-123-645-00	ELECT	33MF	20%	10V
C502	1-102-754-00	CERAMIC	39PF	5%	50V
C503	1-102-518-00	CERAMIC	33PF	5%	50V
C504	1-102-529-00	CERAMIC	100PF	5%	50V
C505	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C506	1-123-645-00	ELECT	33MF	20%	10V
C507	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C508	1-123-645-00	ELECT	33MF	20%	10V
C509	1-136-153-00	FILM	0.01MF	5%	50V
C510	1-102-973-00	CERAMIC	100PF	5%	50V
C511	1-102-116-00	CERAMIC	680PF	10%	50V
C512	1-136-153-00	FILM	0.01MF	5%	50V
C513	1-110-195-00	MYLAR	0.001MF	5%	50V
C514	1-110-206-00	MYLAR	0.0082MF	5%	50V
C515	1-136-155-00	FILM	0.015MF	5%	50V
C516	1-136-162-00	FILM	0.056MF	5%	50V
C517	1-123-618-00	ELECT	22MF	20%	6.3V
C518	1-136-161-00	FILM	0.047MF	5%	50V
C519	1-110-199-00	MYLAR	0.0022MF	5%	50V
C520	1-110-203-00	MYLAR	0.0047MF	5%	50V
C521	1-110-201-00	MYLAR	0.0033MF	5%	50V
C522	1-123-611-00	ELECT	1MF	20%	50V
C523	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C524	1-161-043-00	CERAMIC	0.0022MF	10%	25V
C525	1-131-371-00	TANTALUM	10MF	10%	16V
C526	1-123-645-00	ELECT	33MF	20%	10V
C527	1-136-153-00	FILM	0.01MF	5%	50V
C528	1-102-973-00	CERAMIC	100PF	5%	50V
C529	1-123-607-00	ELECT	0.1MF	20%	50V
C530	1-136-164-00	FILM	0.082MF	5%	50V
C531	1-102-514-00	CERAMIC	22PF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C532	1-136-162-00	FILM	0.056MF	5%	50V
C533	1-123-612-00	ELECT	2.2MF	20%	50V
C534	1-102-973-00	CERAMIC	100PF	5%	50V
C535	1-110-198-00	MYLAR	0.0018MF	5%	50V
C536	1-110-203-00	MYLAR	0.0047MF	5%	50V
C537	1-130-487-00	MYLAR	0.022MF	5%	50V
C538	1-131-408-00	TANTALUM	1MF	20%	25V
C539	1-131-380-00	TANTALUM	33MF	20%	10V
C540	1-102-518-00	CERAMIC	33PF	5%	50V
C541	1-102-518-00	CERAMIC	33PF	5%	50V
C542	1-161-042-00	CERAMIC	0.0018MF	10%	50V
C543	1-131-408-00	TANTALUM	1MF	20%	25V
C544	1-123-617-00	ELECT	10MF	20%	16V
C545	1-123-617-00	ELECT	10MF	20%	16V
C546	1-131-380-00	TANTALUM	33MF	20%	10V
C549	1-131-368-00	TANTALUM	3.3MF	20%	10V
C550	1-131-369-00	TANTALUM	4.7MF	10%	16V
C551	1-131-368-00	TANTALUM	3.3MF	20%	10V
C552	1-131-380-00	TANTALUM	33MF	20%	10V
C553	1-123-617-00	ELECT	10MF	20%	16V
C554	1-123-617-00	ELECT	10MF	20%	16V
C555	1-123-645-00	ELECT	33MF	20%	10V
C556	1-123-645-00	ELECT	33MF	20%	10V
C557	1-123-645-00	ELECT	33MF	20%	10V
C558	1-123-645-00	ELECT	33MF	20%	10V
C559	1-131-501-00	TANTALUM	3.3MF	10%	10V
C560	1-131-385-00	TANTALUM	22MF	10%	6.3V
C561	1-123-609-00	ELECT	0.33MF	20%	50V
C562	1-131-501-00	TANTALUM	3.3MF	10%	10V
C563	1-123-612-00	ELECT	2.2MF	20%	50V
C564	1-123-618-00	ELECT	22MF	20%	6.3V
C651	1-123-661-00	ELECT	100MF	20%	6.3V
C652	1-123-607-00	ELECT	0.1MF	20%	50V
C653	1-131-386-00	TANTALUM	33MF	20%	6.3V
C654	1-163-074-00	CERAMIC CHIP	0.033MF	10%	25V
C655	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C656	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C658	1-163-165-00	CERAMIC CHIP	22PF	5%	50V
C659	1-163-165-00	CERAMIC CHIP	22PF	5%	50V
C660	1-123-646-00	ELECT	33MF	20%	6.3V
C661	1-131-386-00	TANTALUM	33MF	20%	6.3V
C662	1-123-610-00	ELECT	0.47MF	20%	50V
C663	1-163-074-00	CERAMIC CHIP	0.033MF	10%	25V
C664	1-163-175-00	CERAMIC CHIP	56PF	5%	50V
C665	1-163-175-00	CERAMIC CHIP	56PF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C666	1-123-646-00	ELECT	33MF	20%	6.3V
C667	1-123-661-00	ELECT	100MF	20%	6.3V
C751	1-135-092-21	TANTAL. CHIP	3.3MF	10%	16V
C752	1-135-087-21	TANTAL. CHIP	0.68MF	10%	20V
C753	1-135-076-21	TANTAL. CHIP	1MF	10%	35V
C755	1-135-096-21	TANTAL. CHIP	4.7MF	10%	10V
C801	1-102-518-00	CERAMIC	33PF	5%	50V
C802	1-102-518-00	CERAMIC	33PF	5%	50V
C803	1-123-646-00	ELECT	33MF	20%	6.3V
C804	1-123-646-00	ELECT	33MF	20%	6.3V
C805	1-101-001-00	CERAMIC	0.001MF		50V
C951	1-123-579-00	ELECT	470MF	20%	16V
C952	1-123-579-00	ELECT	470MF	20%	16V
CNJ1	*1-562-701-11	CONNECTOR (F) 13P			
CNJ2	1-562-630-11	SOCKET, CONNECTOR			
CNJ3	1-562-631-11	SOCKET, CONNECTOR			
CNP1	*1-564-803-11	CONNECTOR (M) 13P			
CNP4	*1-560-922-11	PIN, CONNECTOR 7P			
CNP5	*1-560-455-00	PIN, CONNECTOR 2P			
CNP6	*1-560-459-00	PIN, CONNECTOR 3P			
CNP7	*1-560-455-00	PIN, CONNECTOR 2P			
CNP951	1-564-665-11	CONNECTOR			
D1	8-719-815-85	DIODE 1S1585			
D2	8-719-815-85	DIODE 1S1585			
D3	8-719-901-83	DIODE 1SS83			
D4	8-719-901-83	DIODE 1SS83			
D5	8-719-907-30	DIODE ERB84-009			
D6	8-719-907-30	DIODE ERB84-009			
D7	8-719-907-25	DIODE ERA84-009			
D8	8-719-907-25	DIODE ERA84-009			
D9	8-719-901-83	DIODE 1SS83			
D10	8-719-901-83	DIODE 1SS83			
D11	8-719-901-83	DIODE 1SS83			
D12	8-719-901-83	DIODE 1SS83			
D301	8-719-101-77	DIODE RD10EL3			
D302	8-719-910-64	DIODE HZ6B1L			
D303	8-719-911-19	DIODE 1SS119			
D451	8-719-911-19	DIODE 1SS119			
D452	8-719-911-55	DIODE U05G			
D453	8-719-911-55	DIODE U05G			
D454	8-719-911-19	DIODE 1SS119			
D455	8-719-911-19	DIODE 1SS119			
D501	8-719-921-11	DIODE HZ2ALL			
D502	8-719-921-11	DIODE HZ2ALL			
D503	8-719-902-79	DIODE KV1236Z			
D504	8-719-951-13	DIODE HZ5CLL			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D505	8-719-911-19	DIODE 1SS119
D506	8-719-911-19	DIODE 1SS119
D507	8-719-911-19	DIODE 1SS119
D508	8-719-911-19	DIODE 1SS119
D509	8-719-900-93	DIODE V0-6C
D510	8-719-911-19	DIODE 1SS119
D511	8-719-910-64	DIODE HZ6B1L
D512	8-719-910-64	DIODE HZ6B1L
D513	8-719-910-64	DIODE HZ6B1L
D514	8-719-910-64	DIODE HZ6B1L
D515	8-719-911-06	DIODE 1SS106
D516	8-719-911-19	DIODE 1SS119
D517	8-719-900-93	DIODE V0-6C
D651	8-719-911-06	DIODE 1SS106
D652	8-719-911-06	DIODE 1SS106
D653	8-719-921-11	DIODE HZ2ALL
D654	8-719-911-06	DIODE 1SS106
D751	8-719-100-05	DIODE 1S2837
D752	8-719-100-05	DIODE 1S2837
D801	8-719-907-42	DIODE SLP-935A
D802	8-719-907-42	DIODE SLP-935A
D803	8-719-911-19	DIODE 1SS119
D871	8-719-902-40	DIODE SLP378A
D872	8-719-902-40	DIODE SLP378A
D873	8-719-902-40	DIODE SLP378A
D874	8-719-907-42	DIODE SLP-935A
D951	8-719-911-55	DIODE U05G
D952	8-719-200-02	DIODE 10E-2
FL1	1-464-363-11	FILTER UNIT, LOW PASS
FL2	1-464-363-11	FILTER UNIT, LOW PASS
FL801	X-3320-517-1	INDICATION TUBE
HIC1	A-4930-007-A	IC B5187
IC50	8-759-200-99	IC TC4051BF
IC101	8-759-700-78	IC NJM082M
IC102	8-759-745-64	IC NJM4560M
IC201	8-759-700-78	IC NJM082M
IC202	8-759-745-64	IC NJM4560M
IC301	8-752-013-30	IC CX20133
IC302	8-759-200-81	IC TC4053BF
IC401	8-759-900-72	IC NE5532P
IC501	8-759-700-78	IC NJM082M
IC502	8-759-912-52	IC CX23035
IC503	8-759-910-36	IC MSM5128-20GS
IC504	8-752-010-80	IC CX20108
IC505	8-759-200-67	IC TC4001BF

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC506	8-759-100-96	IC UPC4558G2
IC507	8-759-908-81	IC MB3763PF
IC508	8-759-914-65	IC MB88501-274M
IC509	8-759-905-45	IC MB3761
IC651	8-759-100-96	IC UPC4558G2
IC652	8-752-010-90	IC CX20109
IC754	8-759-200-67	IC TC4001BF
IC801	8-759-914-08	IC MB88501-253M
IC802	8-759-600-35	IC M54940P
L1	A-4929-013-A	CHOKE COIL
L2	A-4929-014-A	CHOKE COIL
L3	A-4929-014-A	CHOKE COIL
L4	A-4929-015-A	CHOKE COIL
L5	A-4929-016-A	CHOKE COIL
L6	A-4929-017-A	CHOKE COIL
L7	A-4929-017-A	CHOKE COIL
L301	1-433-292-11	TRANSFORMER, OSCILLATION
L501	1-406-120-11	COIL
M501	A-3239-288-A	MOTOR ASSY
M901	X-3320-102-1	MOTOR ASSY, FEED
PH871	8-719-913-55	DIODE GP-2S04
PL50	1-518-567-11	LAMP, PILOT
PL51	1-518-567-11	LAMP, PILOT
PM501	1-454-384-11	SOLENOID, PLUNGER
Q1	8-759-105-29	TRANSISTOR 2SA1385
Q2	8-759-105-29	TRANSISTOR 2SA1385
Q101	8-729-800-42	TRANSISTOR 2SK152
Q201	8-729-800-42	TRANSISTOR 2SK152
Q301	8-729-900-80	TRANSISTOR DTC114ES
Q451	8-729-178-55	TRANSISTOR 2SC2785-E
Q452	8-729-178-55	TRANSISTOR 2SC2785-E
Q453	8-729-117-54	TRANSISTOR 2SA1175-F
Q454	8-729-900-63	TRANSISTOR DTA124ES
Q455	8-729-900-36	TRANSISTOR DTC124ES
Q456	8-729-900-36	TRANSISTOR DTC124ES
Q457	8-729-900-36	TRANSISTOR DTC124ES
Q501	8-729-811-22	TRANSISTOR 2SD1012-F2
Q502	8-729-811-22	TRANSISTOR 2SD1012-F2
Q503	8-729-982-22	TRANSISTOR 2SB822
Q504	8-729-905-52	TRANSISTOR 2SD1055
Q505	8-729-905-52	TRANSISTOR 2SD1055
Q506	8-729-982-22	TRANSISTOR 2SB822
Q508	8-729-982-22	TRANSISTOR 2SB822
Q509	8-729-905-52	TRANSISTOR 2SD1055
Q510	8-729-982-22	TRANSISTOR 2SB822

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q511	8-729-905-52	TRANSISTOR 2SD1055
Q512	8-729-307-72	TRANSISTOR 2SD1077L
Q513	8-729-181-13	TRANSISTOR 2SB811
Q514	8-729-811-22	TRANSISTOR 2SD1012-F2
Q515	8-729-178-55	TRANSISTOR 2SC2785-E
Q516	8-729-900-63	TRANSISTOR DTA124ES
Q517	8-729-178-55	TRANSISTOR 2SC2785-E
Q518	8-729-900-36	TRANSISTOR DTC124ES
Q519	8-729-900-36	TRANSISTOR DTC124ES
Q520	8-729-900-36	TRANSISTOR DTC124ES
Q521	8-729-900-63	TRANSISTOR DTA124ES
Q522	8-729-900-36	TRANSISTOR DTC124ES
Q523	8-729-186-23	TRANSISTOR 2SD862
Q524	8-729-173-13	TRANSISTOR 2SB731
Q525	8-729-178-55	TRANSISTOR 2SC2785-E
Q526	8-729-177-32	TRANSISTOR 2SD773
Q527	8-729-180-93	TRANSISTOR 2SD809
Q528	8-729-606-33	TRANSISTOR 2SC2603-F
Q529	8-729-178-55	TRANSISTOR 2SC2785-E
Q530	8-729-178-55	TRANSISTOR 2SC2785-E
Q531	8-729-811-22	TRANSISTOR 2SD1012-F2
Q532	8-729-811-22	TRANSISTOR 2SD1012-F2
Q533	8-729-117-54	TRANSISTOR 2SA1175
Q534	8-729-606-33	TRANSISTOR 2SC2603-F
Q535	8-729-905-52	TRANSISTOR 2SD1055
Q651	8-729-101-07	TRANSISTOR 2SB798
Q652	8-729-901-05	TRANSISTOR DTA124EK
Q653	8-729-901-00	TRANSISTOR DTC124EK
Q752	8-729-901-06	TRANSISTOR DTA144EK
Q754	8-729-100-67	TRANSISTOR 2SC1623-L7
Q756	8-729-271-22	TRANSISTOR 2SC2712-G
Q801	8-729-901-07	TRANSISTOR DTA124XK
Q802	8-729-901-07	TRANSISTOR DTA124XK
Q803	8-729-901-07	TRANSISTOR DTA124XK
Q804	8-729-901-07	TRANSISTOR DTA124XK
Q805	8-729-100-76	TRANSISTOR 2SA812
Q806	8-729-100-76	TRANSISTOR 2SA812
Q807	8-729-100-76	TRANSISTOR 2SA812
Q808	8-729-100-76	TRANSISTOR 2SA812
Q871	8-729-110-21	TRANSISTOR PH102
Q872	8-729-110-21	TRANSISTOR PH102
Q873	8-729-110-21	TRANSISTOR PH102
R1	1-247-807-00	CARBON 100 5% 1/6W
R2	1-247-807-00	CARBON 100 5% 1/6W
R3	1-247-228-00	CARBON 330 5% 1/2W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R4	1-247-228-00	CARBON	330	5%	1/2W
R5	1-244-258-00	CARBON	5.6K	5%	1/2W
R6	1-246-149-00	CARBON	5.6K	5%	1/4W
R7	1-244-224-00	CARBON	220	5%	1/2W
R15	1-214-729-00	METAL	1K	5%	1/4W
R101	1-247-847-00	CARBON	4.7K	5%	1/6W
R102	1-247-859-00	CARBON	15K	5%	1/6W
R103	1-247-859-00	CARBON	15K	5%	1/6W
R104	1-247-852-00	CARBON	7.5K	5%	1/6W
R105	1-247-849-00	CARBON	5.6K	5%	1/6W
R106	1-247-833-00	CARBON	1.2K	5%	1/6W
R107	1-247-843-00	CARBON	3.3K	5%	1/6W
R108	1-247-895-00	CARBON	470K	5%	1/6W
R109	1-247-857-00	CARBON	12K	5%	1/6W
R110	1-247-863-00	CARBON	22K	5%	1/6W
R111	1-247-852-00	CARBON	7.5K	5%	1/6W
R112	1-247-830-00	CARBON	910	5%	1/6W
R113	1-247-855-00	CARBON	10K	5%	1/6W
R114	1-247-863-00	CARBON	22K	5%	1/6W
R115	1-247-852-00	CARBON	7.5K	5%	1/6W
R116	1-216-198-00	METAL CHIP	1K	5%	1/8W
R117	1-247-831-00	CARBON	1K	5%	1/6W
R301	1-247-835-00	CARBON	1.5K	5%	1/6W
R302	1-247-859-00	CARBON	15K	5%	1/6W
R303	1-247-850-00	CARBON	6.2K	5%	1/6W
R304	1-247-831-00	CARBON	1K	5%	1/6W
R401	1-247-866-00	CARBON	30K	5%	1/6W
R402	1-247-878-00	CARBON	91K	5%	1/6W
R403	1-214-713-00	METAL	220	1%	1/4W
R404	1-247-863-00	CARBON	22K	5%	1/6W
R451	1-247-871-00	CARBON	47K	5%	1/6W
R452	1-247-871-00	CARBON	47K	5%	1/6W
R453	1-247-871-00	CARBON	47K	5%	1/6W
R454	1-247-839-00	CARBON	2.2K	5%	1/6W
R455	1-247-849-00	CARBON	5.6K	5%	1/6W
R456	1-247-855-00	CARBON	10K	5%	1/6W
R457	1-247-831-00	CARBON	1K	5%	1/6W
R501	1-247-855-00	CARBON	10K	5%	1/6W
R502	1-247-855-00	CARBON	10K	5%	1/6W
R503	1-247-879-00	CARBON	100K	5%	1/6W
R504	1-247-879-00	CARBON	100K	5%	1/6W
R505	1-247-846-00	CARBON	4.3K	5%	1/6W
R506	1-247-879-00	CARBON	100K	5%	1/6W
R507	1-247-831-00	CARBON	1K	5%	1/6W
R508	1-247-859-00	CARBON	15K	5%	1/6W
R509	1-247-852-00	CARBON	7.5K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R510	1-247-848-00	CARBON	5.1K	5%	1/6W
R511	1-247-903-00	CARBON	1M	5%	1/6W
R512	1-247-903-00	CARBON	1M	5%	1/6W
R513	1-247-841-00	CARBON	2.7K	5%	1/6W
R514	1-247-846-00	CARBON	4.3K	5%	1/6W
R515	1-247-856-00	CARBON	11K	5%	1/6W
R516	1-216-226-00	METAL CHIP	15K	5%	1/8W
R517	1-247-838-00	CARBON	2K	5%	1/6W
R518	1-247-871-00	CARBON	47K	5%	1/6W
R519	1-247-875-00	CARBON	68K	5%	1/6W
R520	1-247-896-00	CARBON	510K	5%	1/6W
R521	1-247-875-00	CARBON	68K	5%	1/6W
R522	1-247-859-00	CARBON	15K	5%	1/6W
R523	1-247-860-00	CARBON	16K	5%	1/6W
R524	1-247-856-00	CARBON	11K	5%	1/6W
R525	1-247-903-00	CARBON	1M	5%	1/6W
R526	1-247-859-00	CARBON	15K	5%	1/6W
R527	1-247-839-00	CARBON	2.2K	5%	1/6W
R528	1-247-855-00	CARBON	10K	5%	1/6W
R529	1-247-865-00	CARBON	27K	5%	1/6W
R530	1-247-863-00	CARBON	22K	5%	1/6W
R531	1-247-867-00	CARBON	33K	5%	1/6W
R532	1-247-853-00	CARBON	8.2K	5%	1/6W
R533	1-247-867-00	CARBON	33K	5%	1/6W
R534	1-247-875-00	CARBON	68K	5%	1/6W
R535	1-247-855-00	CARBON	10K	5%	1/6W
R536	1-247-841-00	CARBON	2.7K	5%	1/6W
R537	1-247-879-00	CARBON	100K	5%	1/6W
R538	1-247-855-00	CARBON	10K	5%	1/6W
R539	1-247-807-00	CARBON	100	5%	1/6W
R540	1-247-838-00	CARBON	2K	5%	1/6W
R541	1-247-838-00	CARBON	2K	5%	1/6W
R542	1-247-807-00	CARBON	100	5%	1/6W
R543	1-247-855-00	CARBON	10K	5%	1/6W
R544	1-247-887-00	CARBON	220K	5%	1/6W
R545	1-247-869-00	CARBON	39K	5%	1/6W
R546	1-247-869-00	CARBON	39K	5%	1/6W
R547	1-247-847-00	CARBON	4.7K	5%	1/6W
R548	1-247-822-00	CARBON	430	5%	1/6W
R549	1-247-875-00	CARBON	68K	5%	1/6W
R550	1-247-847-00	CARBON	4.7K	5%	1/6W
R551	1-247-891-00	CARBON	330K	5%	1/6W
R552	1-247-873-00	CARBON	56K	5%	1/6W
R553	1-247-875-00	CARBON	68K	5%	1/6W
R554	1-247-875-00	CARBON	68K	5%	1/6W
R555	1-247-859-00	CARBON	15K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R556	1-247-903-00	CARBON	1M	5%	1/6W
R557	1-247-855-00	CARBON	10K	5%	1/6W
R558	1-247-855-00	CARBON	10K	5%	1/6W
R559	1-247-855-00	CARBON	10K	5%	1/6W
R560	1-247-855-00	CARBON	10K	5%	1/6W
R561	1-247-855-00	CARBON	10K	5%	1/6W
R562	1-247-889-00	CARBON	270K	5%	1/6W
R563	1-247-855-00	CARBON	10K	5%	1/6W
R564	1-247-863-00	CARBON	22K	5%	1/6W
R565	1-247-869-00	CARBON	39K	5%	1/6W
R566	1-247-876-00	CARBON	75K	5%	1/6W
R567	1-247-879-00	CARBON	100K	5%	1/6W
R568	1-247-838-00	CARBON	2K	5%	1/6W
R569	1-247-831-00	CARBON	1K	5%	1/6W
R570	1-247-855-00	CARBON	10K	5%	1/6W
R571	1-247-831-00	CARBON	1K	5%	1/6W
R572	1-247-855-00	CARBON	10K	5%	1/6W
R573	1-247-855-00	CARBON	10K	5%	1/6W
R574	1-247-855-00	CARBON	10K	5%	1/6W
R575	1-247-831-00	CARBON	1K	5%	1/6W
R576	1-247-791-00	CARBON	22	5%	1/6W
R577	1-247-879-00	CARBON	100K	5%	1/6W
R578	1-247-833-00	CARBON	1.2K	5%	1/6W
R579	1-247-855-00	CARBON	10K	5%	1/6W
R580	1-247-887-00	CARBON	220K	5%	1/6W
R581	1-247-831-00	CARBON	1K	5%	1/6W
R582	1-247-824-00	CARBON	510	5%	1/6W
R583	1-247-855-00	CARBON	10K	5%	1/6W
R584	1-247-819-00	CARBON	330	5%	1/6W
R585	1-247-855-00	CARBON	10K	5%	1/6W
R586	1-247-843-00	CARBON	3.3K	5%	1/6W
R587	1-247-879-00	CARBON	100K	5%	1/6W
R588	1-247-855-00	CARBON	10K	5%	1/6W
R589	1-247-814-00	CARBON	200	5%	1/6W
R590	1-247-814-00	CARBON	200	5%	1/6W
R591	1-247-831-00	CARBON	1K	5%	1/6W
R592	1-247-831-00	CARBON	1K	5%	1/6W
R593	1-247-847-00	CARBON	4.7K	5%	1/6W
R594	1-247-872-00	CARBON	51K	5%	1/6W
R595	1-247-855-00	CARBON	10K	5%	1/6W
R596	1-247-879-00	CARBON	100K	5%	1/6W
R597	1-247-879-00	CARBON	100K	5%	1/6W
R598	1-247-879-00	CARBON	100K	5%	1/6W
R599	1-247-882-00	CARBON	130K	5%	1/6W
R600	1-247-891-00	CARBON	330K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R601	1-247-871-00	CARBON	47K	5%	1/6W
R602	1-247-855-00	CARBON	10K	5%	1/6W
R603	1-247-847-00	CARBON	4.7K	5%	1/6W
R604	1-247-831-00	CARBON	1K	5%	1/6W
R605	1-247-875-00	CARBON	68K	5%	1/6W
R606	1-247-815-00	CARBON	220	5%	1/6W
R608	1-247-801-00	CARBON	56	5%	1/6W
R609	1-247-855-00	CARBON	10K	5%	1/6W
R610	1-247-855-00	CARBON	10K	5%	1/6W
R611	1-247-863-00	CARBON	22K	5%	1/6W
R612	1-247-855-00	CARBON	10K	5%	1/6W
R613	1-247-895-00	CARBON	470K	5%	1/6W
R614	1-247-879-00	CARBON	100K	5%	1/6W
R615	1-247-879-00	CARBON	100K	5%	1/6W
R616	1-247-855-00	CARBON	10K	5%	1/6W
R617	1-216-217-00	METAL CHIP	6.2K	5%	1/8W
R618	1-216-222-00	METAL CHIP	10K	5%	1/8W
R619	1-216-270-00	METAL CHIP	1M	5%	1/8W
R621	1-247-867-00	CARBON	33K	5%	1/6W
R651	1-216-150-00	METAL CHIP	10	5%	1/8W
R652	1-216-150-00	METAL CHIP	10	5%	1/8W
R653	1-216-206-00	METAL CHIP	2.2K	5%	1/8W
R654	1-216-192-00	METAL CHIP	560	5%	1/8W
R655	1-216-222-00	METAL CHIP	10K	5%	1/8W
R656	1-216-212-00	METAL CHIP	3.9K	5%	1/8W
R657	1-216-198-00	METAL CHIP	1K	5%	1/8W
R658	1-216-240-00	METAL CHIP	56K	5%	1/8W
R659	1-216-277-00	METAL CHIP	2M	5%	1/8W
R660	1-216-270-00	METAL CHIP	1M	5%	1/8W
R661	1-216-237-00	METAL CHIP	43K	5%	1/8W
R662	1-216-262-00	METAL CHIP	470K	5%	1/8W
R663	1-216-198-00	METAL CHIP	1K	5%	1/8W
R664	1-216-230-00	METAL CHIP	22K	5%	1/8W
R665	1-216-225-00	METAL CHIP	13K	5%	1/8W
R666	1-216-220-00	METAL CHIP	8.2K	5%	1/8W
R667	1-216-253-00	METAL CHIP	200K	5%	1/8W
R669	1-216-260-00	METAL CHIP	390K	5%	1/8W
R670	1-216-256-00	METAL CHIP	270K	5%	1/8W
R671	1-216-246-00	METAL CHIP	100K	5%	1/8W
R672	1-216-222-00	METAL CHIP	10K	5%	1/8W
R673	1-216-222-00	METAL CHIP	10K	5%	1/8W
R674	1-216-246-00	METAL CHIP	100K	5%	1/8W
R675	1-216-255-00	METAL CHIP	240K	5%	1/8W
R676	1-216-251-00	METAL CHIP	160K	5%	1/8W
R677	1-216-166-00	METAL CHIP	47	5%	1/8W

ELECTRICAL PARTS

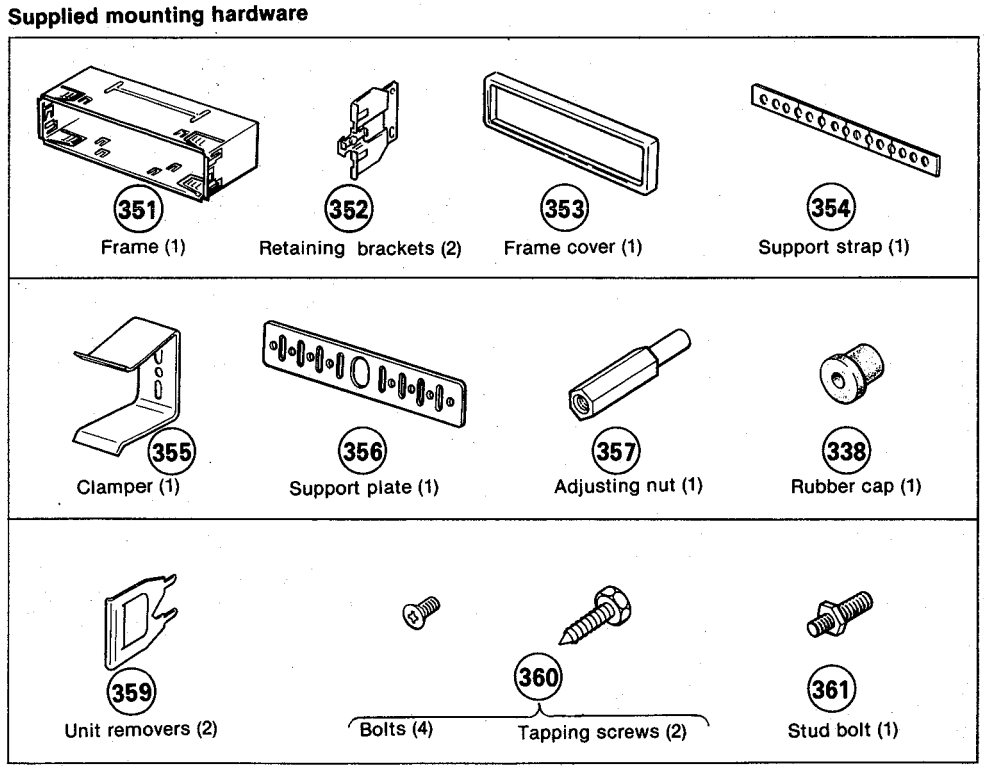
Ref.No.	Part No.	Description			
R751	1-216-270-00	METAL CHIP	1M	5%	1/8W
R752	1-216-270-00	METAL CHIP	1M	5%	1/8W
R753	1-216-270-00	METAL CHIP	1M	5%	1/8W
R759	1-216-222-00	METAL CHIP	10K	5%	1/8W
R801	1-247-813-00	CARBON	180	5%	1/6W
R802	1-247-813-00	CARBON	180	5%	1/6W
R803	1-247-813-00	CARBON	180	5%	1/6W
R804	1-247-813-00	CARBON	180	5%	1/6W
R805	1-247-815-00	CARBON	220	5%	1/6W
R806	1-247-815-00	CARBON	220	5%	1/6W
R807	1-247-847-00	CARBON	4.7K	5%	1/6W
R871	1-247-831-00	CARBON	1K	5%	1/6W
R872	1-247-809-00	CARBON	120	5%	1/6W
R873	1-247-823-00	CARBON	470	5%	1/6W
RV101	1-230-511-11	RES, VAR, CARBON 100K/100K (BASS L)			
RV102	1-230-511-11	RES, VAR, CARBON 100K/100K (TREBLE L)			
RV201	1-230-511-11	RES, VAR, CARBON 100K/100K (BASS R)			
RV202	1-230-511-11	RES, VAR, CARBON 100K/100K (TREBLE R)			
RV401	1-230-513-11	RES, VAR, CARBON 20KX2/100KX2 (BAL/VOL)			
RV501	1-226-773-00	RES, ADJ, METAL GLAZE 22K			
RV502	1-226-703-00	RES, ADJ, METAL GLAZE 10K			
RV651	1-230-583-11	RES, ADJ, CARBON 200K			
RV652	1-230-583-11	RES, ADJ, CARBON 200K			
RV653	1-230-582-11	RES, ADJ, CARBON 100K			
RY301	1-515-519-00	RELAY			
RY451	1-515-519-00	RELAY			
RY452	1-515-519-00	RELAY			
S51	1-554-813-11	SWITCH, KEY BOARD (REPEAT)			
S57	1-554-936-11	SWITCH, KEY BOARD (AMS)/(AMS)			
S58	1-554-936-11	SWITCH, KEY BOARD (AMS)/(AMS)			
S59	1-554-936-11	SWITCH, KEY BOARD (PLAY/PAUSE)			
S60	1-554-937-11	SWITCH, KEY BOARD (EJECT)			
S901	1-553-198-00	SWITCH, LEAF (SLED LIMIT)			
S902	1-553-589-21	SWITCH, MICRO (DOOR)			
S903	1-553-799-00	SWITCH, LEAF (LOADING END)			
T1	A-4929-012-A	TRANSFORMER			
TRS1	1-554-935-11	SWITCH, REED			
X301	1-527-948-00	VIBRATOR, CRYSTAL			
X501	1-567-301-11	OSCILLATOR, CRYSTAL			
X801	1-567-170-00	OSCILLATOR, CERAMIC			

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
351	3-323-219-01	FRAME, FITTING
352	X-3320-515-1	BRACKET (RIGHT) ASSY
352	X-3320-516-1	BRACKET (LEFT) ASSY
353	3-323-218-01	FRAME, ORNAMENT
354	3-310-655-01	SUPPORT (ND), FITTING
355	3-323-211-01	HOLDER
356	3-323-217-01	HOLDER, BUSHING
357	3-323-210-01	ADJUSTOR, STUD BOLT
358	3-323-208-01	BUSHING, RUBBER
359	3-323-214-01	BRACKET (LEFT), DRAWER
359	3-323-215-01	BRACKET (RIGHT), DRAWER
360	X-3320-524-1	SCREW ASSY (A)
361	3-323-209-01	BOLT (4-5), STUD
	1-532-360-XX	FUSE 1A
	1-532-409-00	FUSE, GLASS TUBE 315mA
	1-532-419-00	FUSE 3.15A

No.	Part No	Description
	3-323-206-01	STOPPER (LARGE)
	3-323-207-01	SHEET (A), PROTECTION
	3-323-222-01	CUSHION (LEFT)
	3-323-223-01	CUSHION (RIGHT)
	3-323-248-01	LABEL, CAUTION, SCREW
	3-323-254-01	SCREW (CD), TRANSPORT
	3-323-260-01	CASE (A)
	3-323-268-01	TAPE (C), MAGIC
	3-323-269-01	TAPE (D), MAGIC
	3-323-279-01	(US).....INDIVIDUAL CARTON
	3-323-280-01	(Canadian)...INDIVIDUAL CARTON
	3-323-280-01	(AEP)..... INDIVIDUAL CARTON
	3-701-613-00	BAG, POLYETHYLENE
	3-701-619-00	BAG, POLYETHYLENE, STANDARD
	3-701-626-00	BAG, POLYETHYLENE
	3-760-065-21	(US, Canadian)...MANUAL, INSTRUCTION
	3-760-065-31	(Canadian)...MANUAL, INSTRUCTION
	9-911-815-02	CUSHION
	3-760-065-11	(AEP).....MANUAL, INSTRUCTION

Supplied mounting hardware



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